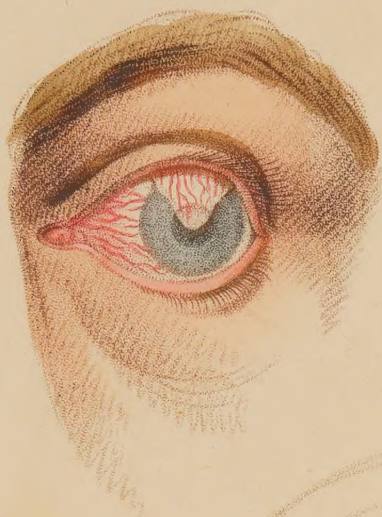
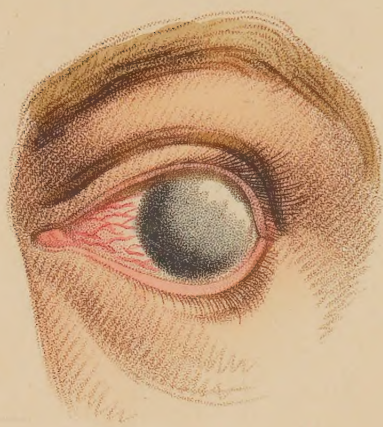


*Fig. 2<sup>d</sup>*



*Fig. 3<sup>d</sup>*



*Fig. 1<sup>st</sup>*





No 114

AN

# ACCOUNT

OF THE

# OPHTHALMIA

WHICH HAS

APPEARED IN ENGLAND SINCE THE RETURN OF THE

## *BRITISH ARMY FROM EGYPT.*

By JOHN VETCH, M. D.

MEMBER OF THE MEDICAL SOCIETY OF EDINBURGH, AND  
ASSISTANT SURGEON TO THE 54TH FOOT.

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Nonne vides etiam cæli novitate et aquarum,  
Tentari, procul à patriâ quicunque domoque  
Adveniunt? Ideo quia longè discrepat aer  
Nam quid Britannum cælum differe putamus  
Et quod in Egypto st qua mundi claudicat axis?

LUCRETIVS, Lib. Sept. 1101.

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1807.

# ERRATA ET CORRIGENDA.

- Page 10, Line last but one, for when, read where.  
 18, last, for Hugham, read Huxham.  
 20, 8th, for alteration, read alleviation.  
 22, 5th from the bottom, for at, read to.  
 25, last, for they, read the inhabitants.  
 66, 3d from the bottom, after eye, insert itself.  
 76, Note 1st, for Caus. in Ovicenna, read Causei in Avicenna.  
 Note 2d, for Phan. read Rhan.  
 83, Line 3d from the bottom, for memori read memoriae.  
 87, 5th from the bottom, for their, read these.  
 99, 2d from ditto, for points, read parts.  
 101, fifth, for have, read bear.  
 103, 3d from the bottom, after taken, insert, in the first instance.  
 104, 3 (Note) for turns, read some  
 15 (Note) for a tinted, read a thickened.  
 after appearance, for a, insert a ;  
 105, 5th, for common, read some.  
 107, 14, for disease, read pain.  
 111, first, for nitrous salts, read solutions of neutral salts.  
 112, last, for necessary, read unnecessary.  
 120, third from the bottom, for agitating, read coagulating.  
 124, Note second belongs to the last name in the page.  
 137, 11th, for thrifting, read shifting.





## PREFACE.

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THE happy exemption of the northern parts of Europe from those forms of Ophthalmia, to which, from the earliest periods of history, the inhabitants of warm climates have been subject, has rendered us so little conscious of their existence that their memory has been gradually lost, both in our schools and in our systems. When those countries, however, in which they have so long prevailed, were the seats of science and of literature, the subject shared an attention adequate to its importance, and in the writings of

the earliest authors of our science these forms of Ophthalmia are described with an accuracy which will not likely be surpassed in the present time. The political connexion, which so long subsisted between Greece and Egypt, rendered the diseases of the one country, in some measure, common to both, and in the writings of the Greek physicians, the diseases of the latter country are fully discussed. In the works of Hippocrates, but still more in the latter authors of the Greek school, as *Ætius*, *Paulus Æge-netus*, *Alexander Trallianus*, and some others, the history of the Ophthalmia, which prevails in modern Egypt, and which has now appeared in this country, can be distinctly traced. In the writings of the Arabian physicians, to whom we are chiefly indebted for the restoration of our science, the disease is



still more accurately detailed. As, however, there are few whose reading has been so extensive as to have led them to consult these authors, on a disease whose occurrence in this country was unknown, the novelty with which it now appears to every one when he first meets with it in practice, is undiminished; and as the properties of the thing examined should always be first ascertained, before inquiring into its relations, the reader, will, perhaps, be as well pleased to find the number of the following pages not augmented by extracts from the writings of Avicenna or Albucasis.

The unexpected appearance of almost every thing connected with the disease, set aside completely, all previous conceptions of its nature, which the mind is

too apt to form; to ascertain the exact truth, has been the only object of my inquiry, and to give the facts to the public as nearly as they presented themselves to me, my principal endeavour on the present occasion; knowing that in the operations of nature, according to the words of an eminent philosopher, "every variety is uniformity, and every change is constancy," and that the more singular phenomena will in the end be found reconcilable with those doctrines which are founded on truth.

In giving the history of the second battalion 52d regiment of light infantry, in which the disease first assumed its violent complexion in this country, and from the experience of which it has been prevented, in other instances, from arriving at the same severity, I am in-



debted to the gentlemanly assistance of the officers, to whom I applied for information. In all the medical inquiries, I am under great obligations from the ready communication of Mr. Peach, the surgeon, and of my particular friend, Dr. Walker, his assistant, to the zeal and activity of both of whom, in opposing the calamity, much merit is due. To the accurate observation, and the professional knowledge of Mr. Warren, deputy inspector of army hospitals, during his superintendence of the disease, I owe no less, than to the kindness of his subsequent attentions.

My own experience was derived from attending to the disease as it occurred in the above-mentioned battalion, during three months, when it was most violent in its form, and when the most vigorous measures were first adopted to overcome it.

During a subsequent period of three months, which has elapsed in printing the few following pages, my distance from the press has prevented me from inserting such additional observations as the more extensive opportunities of my present situation have afforded; but if the facts, now published, assist in accelerating a more accurate knowledge of the disease, the object of their publication will be answered; and should the evidence I have been able to adduce in favour of the mode of treatment recommended, enable others to overcome the prejudices which it has to encounter, I shall be in some measure repaid for the anxiety I have suffered in acquiring a knowledge of the extent to which, in many cases, it must be carried, to ensure its success.

Feversham,  
20th December, 1806.



ON THE

## OPHTHALMIA, &c.

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*On the Propagation of the Disease.*

THE appearance in this country of the species of Ophthalmia, which forms the subject of the present investigation, can be traced by such manifest evidence to the return of the Egyptian expedition, as to place the source of its introduction beyond the necessity of a separate inquiry. But, to obtain such a number of positive facts, as may lead to a just conclusion, respecting the *immediate means*, by which it is communicated, remains an object of important consideration. An impartial and accurate narrative of the occurrence of the

disease in any one instance, seems to present a fairer method of establishing our opinion on that subject, than any general selection, which is liable more or less to be influenced by the prejudices of the author. The leading circumstances which attended the propagation of the disease in the 2d battalion of the 52d regiment, (light infantry), in which it has occurred with a severity unprecedented in this country, are therefore detailed no less from their individual importance, than as affording grounds for a more general deduction.

This battalion was formed at Bambury in Oxfordshire, by a draught of a few officers and privates from the 1st battalion, about the beginning of November 1804. From this it moved to Newbury, Berkshire, where it received about eighty recruits, chiefly taken from the Army of Reserve. Immediately after, it marched to the barracks at Hythe, where, on the 9th of June, 1805, it was joined by about five hundred volunteers from the Irish militia. The bat-



talion remained in the same barracks, in a tolerably healthy state for a corps so lately raised, in which a greater number of diseases, arising from dissipation, may always be expected, than in a regiment of longer standing. Excepting a great proportion of venereal cases, no particular distemper seemed to prevail, and the numbers in the hospital were rapidly decreasing, when the first case of Ophthalmia made its appearance.

The barracks at Hythe are situated on the most easterly point of the extensive marsh of Romney, at a considerable elevation above the sea, and command an extensive view both towards the land and the Channel. The coast is covered for many miles with a dry white *shingle*, intermixed with finer particles of sand, in front of which the men were in general paraded. This is particularly mentioned, as from the hot season of the year, at which the disease made its appearance, from the exercise which the men daily underwent, exposed to the reflection of

the sun's rays from the *shingle* and the great quantity of fine sand, which a long prevalence of blowing weather carried from it, a ready explanation of the origin of the disease seemed to present itself. Had the affection proved general among the troops then stationed under the same, or nearly the same circumstances, those causes, which at the time were very generally complained of, would probably have for awhile set aside all farther enquiry. But this was not only not the case, but strikingly the reverse. The 1st battalion of the same regiment, who were encamped at a little distance, remained free from the disease, although from the farther advanced state of their discipline, they were more exposed to the operation of the above-mentioned causes. The same was still more remarkable in the 43d foot, and the Lincolnshire militia, who continued in the same barracks without any participation in the complaint. Some other cause, therefore, less extensive in its operation, became necessary



to account for the partiality of the attack. This appeared for some time to receive an explanation, from the barrack rooms of the battalion having been occupied the preceding year by the 43d regiment, who at that time had a few men affected with this disease, though in its milder form.

If no more satisfactory method of accounting for the introduction of the disease had been found, this explanation would have perfectly corresponded with its further progress. While, however, a still more evident source of the disease has been detected, a subsequent event has considerably impaired the probability of the former, the 43d having again returned to their former quarters, after the removal of the 2d battalion of the 52d, without experiencing any return of the disease.\*

It was soon discovered that many of the Irish recruits had volunteered from regi-

\* I am sorry to state that this regiment is now labouring under the disease, which, however, did not appear till long after the date alluded to.

ments, in which the disease had prevailed, and had themselves been affected with it, though in its milder form. The general testimony agrees, that those regiments received the Ophthalmia from being garrisoned along with others who had suffered from it in Egypt, and the Mediterranean, and upon particular inquiry, I found that the men in whom the disease first shewed itself in the 52d, had formerly been afflicted with it in Ireland. It will be seen from the history of the symptoms, that one of the most unfortunate effects of the disease, is the tendency which it leaves to a relapse on the application of any irritating cause. The origin of the complaint in this battalion receives therefore the most satisfactory explanation from the combination of the last-mentioned circumstances. The mode of its subsequent propagation will be best understood by a consideration of the leading facts which accompanied it.

The first case which came under observation, occurred about the 14th of July,



and was not followed by any others until the middle of August, when five men became suddenly affected with it. These cases did not attract attention, as presenting any thing in appearance different from Ophthalmia, arising from the usual exciting causes, excepting the little benefit they derived from the mode of treatment generally resorted to, and the length of time to which they were protracted. It was the 30th of the same month when the first case, in which the disease proved violent, was admitted. After this it spread rapidly, every day adding fresh numbers to the list. It was, however, entirely confined to two barrack rooms, and these the farthest removed from each other.

The battalion was some time after removed to Shorncliffe, the sick being left at Hythe, to which also the new cases were sent as soon as detected. After remaining there for four weeks without any check being given either to the frequency or violence of the disease, the battalion returned to Hythe. In October it re-

moved to Dover, where it remained for nine days. No new case of the disease presented itself for the first four days, but during the next five, it occurred with more than usual frequency. The battalion then re-occupied its former barracks at Hythe, where it continued until the 9th of May 1806: at that date the disease being still prevalent, the battalion moved to Riding Street Barracks, situated nearly twenty miles to the interior of the Marsh of Romney. It was there the disease assumed its greatest severity, and that I had an opportunity of making these and the following enquiries; but I shall at present confine myself to the particulars of its history previous to this removal.

The disease at different times became more or less severe in its form, and more or less frequent in its attacks. Besides these more temporary variations, from October to January, its general occurrence was much more inveterate than from January to the final removal from Hythe. No relation seems to have been



observed during these changes, between the violence and the frequency of the disease. It continued to prevail most in particular rooms; in one, only two men had the good fortune to escape its attack, while in others, up to this period, a single case did not occur. Among the officers, two only were affected, during the whole progress of the disease; the servants of both were previously taken ill\*. Very accurate attention was not paid to the changes in the atmosphere during this period, nor did the variations of the disease strike any of the observers, as connected with any particular state of the weather.

To some, perhaps, this detail of the movements of an individual battalion, and the alterations in the form of the disease, may be tedious; but I am anxious to place before the reader all the leading facts with which I am acquainted, that he may either draw his own conclu-

\* The servants, when in barracks, are separated from the companies to which they belong, and excepting in those two instances, escaped the complaint.

sions, or disprove the few observations I have to offer on this part of the history.

The first appearance of the disease, and its after progress, as above detailed, are certainly more explicable, on the supposition of a specific contagion, than on any other. The coincidence of this opinion with what I find to be entertained by other persons, and with the facts on which their opinions are established\*, strongly tends to confirm its truth.

When we reflect upon the improbability of a local disease being produced by a contagion acting upon the system, as well as the total absence of the least alteration in the state of the system, the idea of its being communicated by the local application of the infectious matter will naturally suggest itself. This opinion

\* The disease did not appear in the Indian army after their arrival in Egypt, although exposed to all the probable exciting causes, until they arrived at Ghiza, when there was an English hospital established for the disease. Vide Mc Gregor's Sketches.



I was easily led to adopt, from the support it received from external evidence, and which the nature of the complaint has since confirmed to my full satisfaction; the formation of a *purulent matter* being one of its earliest and leading symptoms. Besides the contradiction which the supposition of a more general contagion receives from the symptoms of the disease, it has not the bare support of probability from the external circumstances of those who became affected with it. All the attendants on the sick, who were particularly careful in avoiding such intercourse as might communicate a local disease, escaped without exception—while the prevalence of the disease in particular companies, without any difference in their relation to other causes, and among patients admitted into the hospital on account of other diseases, forms a striking contrast to the exemption of the former. Each company has a separate room, in which the intercourse among the men is necessarily great. Many things are used in

common ; nor are they even over scrupulous in washing their faces in the same water ; and however attentively some may avoid this, they are all under the necessity of having recourse to the same towel\*. Many men who remained free from the disease, after it had affected all the others in the rooms, to which they belonged, were in the habit of rather allowing themselves to remain dirty than make use of the barrack towel, and always took an opportunity of washing at such a distance, as to prevent the possibility of local communication ; although some of these men, latterly, caught the infection, the practice still continued on the whole successful. During the progress of the disease many of the women became affected with it. The rather promiscuous intercourse which subsists between them and

\* Mr. Mc Gregor mentions that Dr. Whyte preserved the men under his care free from the disease, by making them wash their eyes frequently with separate water. The same practice has been successfully adopted by several regiments in this country.



the men, points out one of the many means by which the matter might be inadvertently conveyed to the eyes of the latter.

The concurrence of the presumptive proofs of the infectious nature, of the discharge from the eyes, is so complete, as in a great measure to supply the want of the positive experiment, which I believe no person will have the rashness to make upon himself, or the cruelty to inflict upon others. The matter was in one instance applied to the eye of a dog, and soon produced a considerable degree of irritation, which continued for some hours, when the loss of the dog prevented farther examination. Whatever the result of the experiment might have been, it would have afforded no grounds for drawing a conclusion with regard to its effects on the human species. If the disease did not take place, no negative argument could be drawn from its failure; and if it did, it might be ascribed to the effects of common irritation, unless the experiment

was very fully repeated. What effects the application of the matter might have upon other secreting surfaces, remains also to be learned. A gonorrhœa, either by *metastasis*, as is supposed by St. Yves, Lange, Swediaur, and other respectable authors, or by the contact of its matter, as is particularly exemplified by Mr. Ware\*, is capable of producing a purulent inflammation of the eye. The structure and functions of all external secreting membranes being nearly alike, it is not unnatural to suppose, that they are equally liable to be affected by the diseases of each other.

When we are aware that the disease is propagated by a local infection, its appearance, in several instances, where it is difficult to trace it to any personal communication, becomes readily explained. The analogy of every disease contracted by contact, gives us reason to suppose that the surrounding media, on which the matter may be deposited, as

\* Vide Treatise on Diseases of the Eye, Vol. I.



bedding, &c. will be no less capable of communicating the present affection. A number of circumstances respecting its prevalence in Egypt, which upon other grounds, are inexplicable, afford additional proofs of this opinion. The disease is more frequent among the natives than strangers\*. A disease propagated by a general contagion, or produced by the peculiarities of climate, we might expect to be the reverse; but when we know that it is propagated by a local infection, the freer intercourse of the natives with each other explains the singularity. For the same reason, it is more frequent among the lower than the higher classes of society†; it prevails more in cities than in the country‡; and when it once enters a family, its extinction is very long in being effected.

The present, and every other instance of the occurrence of the disease at a distance from the country in which it has taken its rise, affords undisputed

\* Volney.

† Idem.

‡ Idem.

proofs of its powers of self-propagation. It is difficult, however, to separate the connexion which the mind is so apt to form between it and some of the most remarkable of the physical peculiarities of the climate of Egypt, which *a priori* we might readily expect to be the exciting causes of the malady. To these, writers, both ancient and modern, have confidently ascribed the disease; but whatever might have been their force in its first production, we have certainly obtained too near a demonstration that the disease can exist when beyond their influence. The opinion\* which ascribes it to the food and manners of the inhabitants, is equally disproved by its occurrence, in this and other countries, where the same manners do not exist.

The fair deduction from these facts is, that the disease is capable of propagating itself independent of any peculiarity of climate. At the same time to suppose that

\* Volney's Voyage en Syrie et en Egypte, Vo'. I.



it is wholly uninfluenced by such causes as affect the eyes, when in perfect health, is contrary to the dictates of common observation. Although we cannot, in opposition to such positive facts, consider the prevalence of the Harmattan, and the great light and heat of the climate, as the direct causes of the disease, they must be very powerful agents both in aggravating and keeping it up; and as whatever aggravates the violence of an infectious disorder, indirectly contributes to its greater extension, these may be justly regarded as, in some measure, the means by which the Ophthalmia has so long afflicted that unhappy country.

In other tropical countries, as the East and West Indies, Persia and Syria, such causes seem capable of producing Ophthalmic affections, independent of any infectious communication. The difference, however, in the appearance of Ophthalmia, produced in this manner, is a corroborating proof of the specific nature of

the form under which it exists in Egypt. According to the testimony of an author, to whom I am already indebted, as well as the verbal descriptions I have received, this difference is such as to leave no doubt in the mind of a person, who has seen the two diseases, that their nature is distinct.

The specifics which the inhabitants of those countries possess, for repelling the attacks of the Ophthalmia, to which, at particular seasons, they are subject, shew also that it differs from the disease we have received from Egypt, in checking which, no means as yet employed deserve the appellation of a remedy. Epidemic Ophthalmias have occasionally appeared both here\* and on the Continent, but their temporary duration sufficiently distinguishes them from the one, that has newly made its appearance amongst us. There is also an

\* Ware, on the Ophthalmia which prevailed in Berkshire. Hugham, on an Epidemic Ophthalmia.

Ophthalmia frequent in warm countries, of more rare occurrence in Europe, which is attendant upon dysentery and hepatic affections, and has very little analogy to the species with which we are at present engaged.

We have now considered, as fully as the intention of the treatise allows, the connexion which the disease has with the more obvious peculiarities of the climate from which it has been imported. The form under which, in every instance previous to its occurrence in the 2d battalion of the 52d regiment, it had appeared in this country, seemed to correspond with the change of climate it had experienced; but as in this instance it has equalled, if not surpassed, in the severity of its attacks, what was experienced by our army in Egypt, another inquiry suggests itself respecting this difference. The cause must be looked for either in some peculiar predisposition of the men, or in the nature of the particular district. The most



scrupulous observer will be unable to detect any decided predisposition in this battalion, from the short history I have given of its formation. The heat and the sand might, on the first occurrence of the disease, have tended to aggravate its form ; but neither the succeeding winter, nor the change of station, brought any alteration.

The wide departure of the symptoms of the disease from those of ordinary inflammation, joined with the protracted length, but above all, the intermittent form of the most important symptoms, led me, as soon as I had sufficiently ascertained the truth of this last circumstance, to connect it with the nature of the district, in which it occurred.

I have already stated that the barracks of Hythe are situated upon the border of the marsh of Romney, and that it was there the disease assumed, for the first time in this country, so violent a form ; and that the barracks at Riding Street, to which the battalion afterwards removed,

are situated more towards the centre of this extensive marsh.

On combining this peculiarity of situation with the form and inveteracy of the disease, few I think can accuse the rashness of the inference by which I am led to suppose, that the influence of such a situation would not be slight upon a disease, which seemed to possess a type so decidedly intermittent. Every subsequent event, from which any conclusion can be obtained, enables me to state the proposition with much additional confidence. The sudden increase of severity, which the disease underwent after the removal of the battalion from Hythe to Riding Street, was equally remarkable with the mild form which it assumed when the battalion afterwards removed to Maidstone, a distance of only 24 miles.

From the impossibility of detecting every case capable of communicating the infection previous to the march of the battalion, the disease continued to present itself after the battalion arrived at Maid-

stone. There, however, in spite of the most unfavourable circumstances, no violent case occurred, although the fatigue of the march, but above all, the crowded state of ill ventilated and dusty barracks, (which had lately been converted to that purpose from granaries), might be expected to have acted as powerful aggravating causes. The sick, who were left at Riding Street, continued to experience the disease with no more alteration than is justly due to the effects of treatment. Upon the return of the battalion from Maidstone, in consequence of the approach of the assizes, which prevented the experiment from being more fully tried, the same violent form of the disease occurred. So sudden was the change, which the disease underwent for the worse, after the first removal of the battalion at Riding Street, that the men in the hospital expressed it by calling it a blight. The sudden and general changes, which it at different times has experienced, can only be ascribed to the change in the



physical nature of the situation. These changes in the disease I have observed to attend cloudy weather, particularly when accompanied by thunder, rather than hot sun-shine. Many individual cases have relapsed from exposure to cold and moisture, and the frequent appearance of ague substantiates the presence of its exciting cause.

I am sorry to have an opportunity of urging the probability of this aggravating cause of the complaint, from its having occurred in a violent form in other regiments stationed in the lower district of Kent. None of these, as yet, have experienced it with the same violence as the second battalion of the 52d; neither have they been so immediately exposed to the same cause.

It has, however, been more severe with them than in any other part of the kingdom where it has yet appeared, excepting its still more recent occurrence in Essex, where its severity has been little inferior to the present example; but where, from

the timely application of vigorous measures, it has been less fatal in its effects.

Although the intermittent form has not been much adverted to in some of those instances of the more violent occurrence of the disease, I have had opportunities of hearing, from some of the patients themselves, transferred to the care of the second battalion of the 52d, on the embarkation of their own regiments, that the pain which they suffered observed that form. Some of these men, I have also to add, have experienced relapses of the disease at Riding Street, in a degree much more violent than was usual in the hospitals from whence they came.

When endeavouring to lessen the credit which has been given to some physical causes, which might be expected to influence the disease, I supported the argument with facts drawn from the relation which the disease appeared to have with them in Egypt. I shall now make some remarks, which I think will tend to substantiate the efficacy of that cause, to which

alone I am inclined to ascribe much influence, by reference to the same country.

The nature of the Delta of Egypt, in which the disease chiefly prevails, is so familiar to the reader, that it is hardly necessary to remind him of the effects which must result from the peculiar manner, in which the irrigation of that country is effected ; the dews to which, like every other warm climate, it is subject ; and the artificial means employed for preserving the water during the dry season. All these present such a source of moisture as, at first consideration, might be supposed to be almost incompatible with human life, and the effects of this humidity are sensibly felt in the chilliness which attends every breeze, but what comes from the S. S. West ; but to the prevalence of this wind, which constitutes the campsin, (though in other respects accompanied by the most distressing circumstances) which, by the dryness of the air, is enabled to carry off the moisture of the stagnant water as quickly as it is formed the



owe their preservation from the deleterious consequences, to which that moisture would otherwise give rise. To this reason, (if there is any justice in supposing that the disease is influenced by moisture), may be ascribed the absence of any particular aggravation during the prevalence of the *harmattan*\*, though attended with so many circumstances which would be else obnoxious to the eyes.

The general qualities of moisture, therefore, without any regard to the peculiarity of their origin, but according to the degree of their presence, may be considered as the principal cause in aggravating the disease, whether it occurs in Egypt or in Britain. The following remark of Avicenna, in whose works a very accurate account of the disease is to be found, adds weight to this conjecture, which has arisen out of the circumstances which have been adduced in its support :—

“ Quumque preedit hyems septentrio-

\* Volney.

“*calis, et sequitur ipsam ver meridionale*  
 “*pluviosum, et æstas pluviosa, multipli-*  
 “*catur ophthalmia; similiter, quando*  
 “*hyems est calida et meridiana, replet*  
 “*corpus humiditatibus.*”

I have deemed it unnecessary to occupy the time of the reader by entering into a refutation of many other opinions relative to the origin and extension of the disease. The general credit, which the local infectious nature of it seems now to have obtained, from men who have witnessed it, makes such an investigation still more unnecessary \*. In concluding

\* There is a mode to which the propagation of the disease has been ascribed, but which, except from the apparent positive nature of the evidence given by Mr. Edmonstone, I should not be inclined to consider. This author conceives the disease capable of being communicated by looking at eyes already affected with it, and gives some cases where the patients ascribed the origin of the disease to that source. In the history of the symptoms it will be found that the disease is capable of existing for a considerable length of time without the knowledge of the patient, and the uneasiness occasioned by looking at an inflamed eye, to a person not accustomed to it, might readily have produced such an aggravation as would attract his attention.

these observations on the history of the disease, I have to lament, in common with others, the difficulty which attends all such investigations, and the futility of offering conjectures in the room of more accurate deductions.

Mr. Edmonstone's own case in which the disease appeared only a few hours after his exposure to it, I believe to be by no means a singular one, but to have been caused by an inadvertent application of the matter while he was examining his patients. See an account of the Ophthalmia which appeared in the Argyleshire fencibles.



## ON THE SYMPTOMS.

When the disease assumes its violent form, the symptoms undergo such a change, both in their nature and appearance, that their consideration naturally divides itself into that of their two stages. Whether the disease goes through both stages, or is confined to the first, as is frequently the case, the first appearance of the disease is so uniformly the same, that it may appear unaccountable that any difference of opinion should exist concerning the seat of its commencement.

This has arisen from the appearances which are most likely to be noticed on a superficial examination being, as I am confidently led to believe, in every case preceded by others, which a more narrow inspection may detect.

The first change, which a view of the eye itself presents, is that peculiar appearance generally implied by the term glassy; depending, as may be presumed, on a distension of the finer vessels, the trunks

of which may soon after be observed to be increasing in their visible numbers, and advancing over that part of the adnata covering the eye, in the form of a plexus. The vessels of this plexus are extremely minute, and differ very little from each other in their size : they assume a colour which approaches more to that of a light brick, than is the case in common Ophthalmia. The same increase in the size and in the tortuous course of individual vessels, as is general in the commencement of the latter affection, is never remarkable in this.

The extent to which this vascularity often suddenly advances over the eye, naturally led to the suspicion of its being subsequent to some other symptom, a fact which future observation has confirmed.

In every case which has since occurred in which the above-mentioned symptoms were observable, on pulling down the lower palpebra, its internal lining has been found so highly vascular as to leave

little doubt of this affection being at least of the same standing with the former, while, from the decided presence of inflammation in this part, prior to any such appearance elsewhere, in all cases where the disease is early detected, we can have little doubt as to the internal lining of the palpebra being the first seat of the disease. In what particular part of this surface the action first takes place, is more uncertain. In many cases the inflammation appears to be farther advanced towards the doubling of the membrane, where it passes from the eye to line the lower palpebra, diffusing itself from thence in every direction both upon the adnata of the eye and towards the tarsus. In others it seems to commence immediately beneath the tarsus, giving that part of the conjunctiva an appearance very distinguishable from that of health. In other cases the inflammation is pretty equally advanced, both at the doubling of the conjunctiva, and upon the tarsus, having an intervening line of the natural colour



which, as the vascularity advances, is included in the disease.

The *caruncula lacrymalis*, and the fold of the conjunctiva, which comes forward upon the eye, are the first parts after the palpebra, which take on the disease, and are generally the last in which it disappears: but the symptom, which above all others is characteristic of the disease, is the formation of a purulent matter. This takes place as soon as the action which I have described has commenced, and it may be always detected, if the quantity discharged does not lead to the discovery, by pulling down the inferior palpebra, at the bottom of which more or less will be found to have accumulated. As the early detection of the disease is of much practical consequence to the patient, and his speedy removal from the healthy, a measure which cannot be too strongly recommended, no person interested in treatment, or in the investigation of the disease, will blame the minuteness of this description.

These symptoms are followed by an increased lachrymal discharge, which is aggravated by exposure to a current of air; but very little uneasiness is complained of from the light. Even after the symptoms I have described, have made so much progress as to give a stranger to the disease an alarming idea of its violence—the light is seldom offensive, nor do many of them find any inconvenience from applying the eye to minute objects. In some cases a dimness is complained of, and in others the pupil is more than usually dilated, a circumstance from which I am always led to expect much future violence; but in the generality of cases, the diameter of the pupil undergoes no alteration.

After the disease has once taken place, the whole inner surface of the palpebra becomes rapidly inflamed, the formation of pus becomes much augmented, and it requires to be frequently wiped off; in the mornings it collects towards the internal canthus, and the tarsi are found

glued together. After this, the progress of the disease is less uniform—the eye may remain in this state for weeks, even months, without proceeding further ; and however severe the disease may appear to another person, it gives little uneasiness to the patient. In a few cases a slight degree of superficial ulceration of the adnata, where it covers the eye, takes place ; it is partial, and deserves rather the name of excoriation ; by destroying the vascularity of the surface, these parts are of a whiter colour than the rest of the membrane. In those cases, where the disease has a tendency to become violent, the first symptoms are soon followed by attacks of heat and scalding, and by a sensation which the patients universally express, by comparing it to gravel in the eye. This sensation of an extraneous body in the eye, though common to every inflammation of that organ, is, from its temporary duration and regular recurrence, peculiarly characteristic of the present affection, and is always indicative of the progress it is making in the



individual case, although its severity does not always correspond with the degree of the vascularity. It is so distressing, while it continues, as to prevent sleep, and draw the attention from every thing else. Its departure is, in general, as sudden as its accession, after which the eye is free from all uneasiness, until the next recurrence of the same symptoms. The general time which this sensation lasts, is from three to four hours; the morning, but more particularly the evening, about the time of going to rest, are the periods at which it for the most part occurs. In no instance during this stage of the disease, did I ever find any mark which could in the least indicate an affection of the system.

The above outline is, as nearly as I can draw, the general appearance of the commencement of the disease, and if opportunities were in every case afforded of watching, its whole progress would be found, I am confident, to be the case

with very few exceptions ; but as attention could not always be paid to every case on the very accession of the disease, its commencement has often been dated from the first sensations of the patient himself, or the presence of such a degree of vascularity in the adnata covering the eye, as could not be overlooked by the most indifferent observer ; and from this, the opinion of the more sudden formation of the disease seems to have arisen. The sensation of an extraneous body in the eye has been often mentioned as the first symptom of the disease. The same has been done with respect to the attention of the patient being excited by finding his eye-lids sticking together in the morning, from the accumulated quantity of pus, or the sudden attack of a pricking or darting pain through the ball of the eye, or in the forehead, more particularly between the eye-brows.

Most of those more violent symptoms, when they occur without any others being observed to precede them, have happened in men

who have either been fatigued by exercise, who have been kept awake upon duty, or who had determined to conceal the disease as long as possible, from which, and from the extensive analogy of other cases, there is every reason to suppose that the disease had commenced long before.

In all instances of the new occurrence of the disease, before steps are taken for its early detection, a case will seldom present itself to the surgeon, until urged by the violence of the disease, either from the patient's ignorance of its previous existence, or his disregard of its nature: but when the plan is adopted, as it always should, of daily inspecting the healthy part of any community in which the disease may appear, it will be the fault of the person who undertakes this duty, if ever he meets with a new case where the disease is attended with any other symptom than an increased vascularity of the palpebra, and the others which have been enumerated as marking its earliest appearance, as soon, however, as the patient



complains of pain, and particularly when we have not seen the disease on its first appearance ; but when it has been allowed to be aggravated by exercise, &c. it may be expected, unless opposed by vigorous measures, to be rapidly arriving at other symptoms which belong to the next stage.

In the first stage the affection is often confined to one eye, but it usually extends to the other, previous to the commencement of the second. The vascularity of the adnata covering the eye, is described as being often very conspicuous, it is even in that period sometimes so much augmented as to give the eye the cup-like appearance, known by the term *Chemosis*. In general, however, this appearance is subsequent to, or simultaneous with, a great, and for the most part sudden, tumefaction of the palpebra, which is the external symptom which best characterises the accession of the second stage. This enlargement is most conspicuous in the upper eyelid, which the patient is now incapable of raising so as to admit the light, without the assistance of external force. The se-

cretion of purulent matter becomes at this time suddenly increased, and of a thinner consistence, a wish to avoid the light, rather than absolute pain, is produced by its admission, to which the longer the eye is exposed, the less inconvenience it seems to suffer: the secretion of tears becomes more copious, and at particular times they are discharged in great quantities with much scalding. The attack of the swelling is often so sudden, that it might have been supposed to have arisen from the bite of an insect, or any other cause of sudden irritation. Sometimes it continues to increase almost by sensible degrees, and attains its utmost height in a few hours, at others it increases more gradually during the space of several days. Each of these varieties in the appearance of this symptom, although observed to occur at all times, prevailed more exclusively at particular periods. When the eye is examined after the accession of this swelling, the extent of the Chemosis exceeds what can possibly be supposed from its occurrence in common Oph-

thalmia. The adnata in many cases is tumified to such a degree, as to overlap for some extent the circumference of the Cornea, and even to protrude between the palpebræ; occasionally it presents the appearance of an effusion of red serum behind the vascular surface of the conjunctiva, and, in some cases, apparently, in consequence of the treatment which will be afterwards mentioned, it was formed by an effusion of colourless serum.

The Chemosis, when taking place as in common Ophthalmia, gradually extends from the external circumference of the adnata towards the Cornea, with its edge accurately defined, leaving a circle on the natural plane around the latter, which gradually fills up as the swelling advances, until the Cornea is completely surrounded. General, however, as this symptom is in every case where the disease proves violent, the vascularity is sometimes considerable, even extending in some degree upon the Cornea, without being attended with any tumefaction, excepting at particular spots. In the early stage small white



elevations occasionally were observed to appear in different parts of the adnata, and occasionally upon the cornea, but which I do not believe to be much connected with the disease. They appeared in the mildest cases, and are even common in health. In a few instances they were punctured without any perceptible effect.

In the second stage, the tendency of all the parts to swell to a degree greater than the pain in the tumified parts would lead us to expect, is a remarkable feature in the disease. The sudden enlargement of the palpebræ at first occasions Entropion, from the tarsi not yielding with the same facility. In the latter stage of the disease, the reverse of this happens, as will be more particularly noticed. The sensations produced by this enlargement of the external parts of the eye, are by no means troublesome. Stiffness, a sense of weight, and the uneasiness occasioned by the accumulation of matter being the only inconvenience which can be attri-

buted to these symptoms. The sensation of gravel rolling over the eye, described as occasionally tormenting the patient during the first stage, is less troublesome in this. The patient is, however, subjected to a deeper seated pain, which is no less severe to him, than interesting in the history of the disease, from the little connexion it seems to have with the external symptoms, and the alarming indication it presents of an internal affection. Although the accession of this symptom often precedes the aggravation of the external ones, that the description of the latter might not be interrupted, the consideration of the former has been delayed as long as its importance would admit; and as this symptom, besides the peculiarities it possesses, is the only one from which we can infer the violence of the disease, when it assumes the greatest interest, its separate consideration will not be deemed an unnecessary digression. The attacks of the deep seated pain are for the most part sudden, and continue

without abatement until their total cessation, the suddenness of which is no less remarkable than the interval of perfect ease which succeeds. Occasionally the attack is preceded, but this in a very few cases, by a chilliness and slight nausea; in others, some peculiar sensations about the head announce its approach, but, in general, the regularity of its occurrence is the only reason the patient has for expecting its return. This pain, which is attendant upon the disease when it affects the internal parts of the eye, as appears from the effects which seldom fail to take place when its occurrence has been frequent, is not necessarily seated in the organ itself. Frequently it occurs in the neighbouring parts of the head and face, in a degree no less excruciating than when it occurs in the eye. When the pain does not take place in the eye, the space over the frontal sinuses, the temples and face, are the frequent seats of its occurrence; sometimes it is situated immediately above the eye, where it generally commences



about the supra-orbitary hole. During its presence in any of these parts, it is aggravated by pressure, and a circumscribed swelling occasionally takes place, which is sudden in its appearance, and is usually dissipated during the first intermission. In other cases, particularly when the swelling appears in the face, it partakes more of an oedematous nature, and though equally sudden in its accession, is longer before it subsides. These varieties in the seat of the pain, are more frequent when the disease is least influenced by treatment. From the external circumstances which attend the pain, as well as from the sensations of the patient, it seems entirely confined to the coverings of the cranium. At all times the eye, as may be naturally supposed, is its most frequent situation: here it is generally described as of a darting or shooting kind, sometimes as if the eye were stuck full of needles; in a few cases it feels like something rolling in the internal part of the eye; it does not seem to proceed much into the

head, but is always described as of the most unsufferable nature. It is generally confined to one eye at a time, although it frequently shifts from one to the other. Irritating the eye seems to have no effect in inducing or in aggravating it, and no local application to have the least effect in diminishing it. In those cases where the external swelling allows the eye to be examined, no uneasiness results from the presence of a strong light. If any change is observable in the pupil, it is dilated, and more immoveable than natural; the vision is less distinct, and the globe of the eye is in some cases enlarged.

The absence of all uneasiness from the presence of light, is more remarkable in this violent state of the disease, than when the external parts are only affected. In the latter case, the greater irritation, perhaps, arises from the motion of the palpebræ, which in the former is prevented by the swelling that has taken place; whether it may in some measure arise from the greater violence of the pain engrossing the attention

of the patient, from the slighter affection of the external parts, is uncertain, the fact, however, is very general. The recurrence of the pain, and the length of its duration, as may be seen from the *Appendix*, does not observe any very general rule. In the greatest number of patients, it comes on from ten to twelve in the evening, which at first led me to suppose, with others, that it was merely such an exacerbation as is met with in the most continued form of disease. The usual length of the paroxysm, from the most extensive calculation which I made, is from three to four hours; two and six hours are likewise common periods for it to last.

I have to regret, that from my ignorance of this peculiarity of the disease, I did not profit by the opportunities I had of ascertaining its phenomena, before the free adoption of the lancet, after the use of which, the paroxysms, although as accurately defined in their accession and departure, observed much less regularity,



both in their duration and in their interval. In cases of relapse, however, where either from the mischief already done by the complaint, from the debility of the patient, or any other particular circumstances, venæ section was more sparingly employed, the regularity of the paroxysm was always more observable. In some of these cases, its interval became gradually longer, till the paroxysm totally disappeared. If it had been in the habit of recurring in the night time, the patient was for some time unable to sleep during the period which it used to occupy.

During the presence of the pain, the secretion of tears is more copious, and the purulent discharge is almost uniformly diminished.\* The latter symptom which, during the intermission, is very excessive, (along with other changes, which seemed to be

\* The diminution of this secretion during the fit of an intermittent fever, has been, without any obvious reason, more adverted to than the same occurrence in one of a continued form; it seems entirely independent of the type of the disease, but is merely incompatible with the increased action which is present.

produced by the employment of blood-letting), was, in the latter part of the time in which I was occupied in observing the disease, much diminished in quantity. In those cases, when the first paroxysm of pain comes on before the external swelling, the palpebræ often enlarges from its natural size, so as completely to fill the orbit in the course of a few minutes. These are the chief circumstances which I have collected relating to this symptom, and I have reason to believe, that in all instances they will be found to be nearly similar. There were, at the same time, some well marked cases, where there was no entire intermission, and, to give full credit to the assertion of the patient, no remission in its violence. In a few cases where this variety occurred, the men were either of a habit uncommonly robust, or the shape seemed to indicate a determination to the head, or they had been exposed to some strong exciting cause. When the pain occurred in this form, it particularly indicated the free use

of the lancet, by which it was infallibly removed. When these patients experienced a relapse, the disease then partook of the common form. In a few cases, where the first attack of the pain was intermitting, it became continued in the relapse, but never so decidedly as when this variety occurred in the first instance.

While the patient continues liable to the recurrence of this symptom, and the external disease exists in its greatest violence, some considerable change may be naturally looked for in the state of the system. In my notes I find a considerable number of cases, in which the state of the pulse is singularly varied. When I first attended to this symptom, that plan of treatment which alone has been found efficacious in subduing the violence of the disease, had not been so fully adopted, and at that period no case presented itself, where the pulse was at all affected. In those cases, however, where the lancet was more freely employed without putting a stop to the progress of the disease,



several singular varieties were observable. In the generality of these cases, an increased frequency, attended with softness, and more or less compressibility, was the change which took place. In some the frequency did not exceed that of health, in others it amounted to one hundred and twenty in a minute. This variety in frequency was no less remarkable in different patients, who apparently were affected with the disease in the same degree of violence, than it was observed, under particular circumstances, to occur in the same person.

In such a number of cases, as to give the observation some degree of generality, the pulse, which in the recumbent posture did not much exceed its usual frequency, in the sitting or erect position, rose to above one hundred and forty. This remarkable irritability of the pulse remained, in some cases, in a slighter degree during the intermission of the pain, but it was more remarkable while that symptom was present. In some cases the

pulse was extremely small, and although the symptoms might be relieved by venæsection, no immediate change was produced in the state of the pulsation. In other cases the pulse was weak, irregular, and intermitting. In no case did it occur, where its hardness or fullness would lead to the suspicion of an inflammatory affection, so violent as to give rise to the symptoms which have been mentioned. Excepting in a very few instances, no change appeared in the other functions, in conjunction with that of the pulse. In a few cases heat was complained of, but in two only was the temperature found increased. In two or three instances thirst was present; but the occurrence of these circumstances was so rare as to make the cases particularly noticed. The bowels were upon the whole rather slow, which may in some measure be attributed to confinement and spare diet. The tongue is often a little white, but never dry, or in the least furred. The appetite for food is perfectly natural during the greatest

violence of the disease, and it requires much resolution to resist the cravings of hunger, which the necessary diet creates. The secretion of urine was only examined in a superficial way, and no alteration was detected in its quantity or appearance. While these functions are in almost every case during the intermission performed as in health, during the pain the patient sometimes feels oppressed, and the surface becomes cold; in one case fainting occurred about the end of the paroxysm, which seemed entirely the effect of the disease, as the patient was of a strong constitution, and had not lost any blood for a considerable time before.

With a more or less frequent return of such paroxysms of pain as have been described, and which hereafter will be alluded to when the word pain, without any farther qualification is employed, the external parts continue to undergo such changes as are indispensable from such a state of increased action in the vessels; of these changes, however, partly from the



difficulty of examination, I am sorry to say I cannot give any thing like an accurate description. Some of the states through which the parts must from analogy be supposed to have passed, before arriving at those where they again became liable to detection, have entirely escaped my observation. From the first occurrence of the disease, a discharge of matter has been mentioned to attend it. As soon as this is in such quantity as to make its accumulation observable, its chief source at that time may be traced to the doubling of the lower eye-lid, in which also a slight degree of ulceration may often be detected. The nature of this matter was never ascertained by experiment, but from its appearance, and the changes which it underwent, it appeared to resemble pus, or at least as much so as those secretions from other external secreting membranes, to which we give the term purulent: it stained the linen of the patient, in the same way as the matter from gonorrhœa. Immediately after the tumefaction of the

eyelids, this discharge of matter becomes immoderate\*, but from what state of the surface is uncertain. I never could detect any extensive ulceration of the conjunctiva, either where it covers the eye or lines the palpebræ.

When the violence of the disease remits, the external tumefaction of the palpebræ becomes less tense, the tarsi separate from each other, and assume a gaping appearance, the internal surface of the palpebræ remains, however, for some time so much swelled as to prevent the examination of any other part, and over its whole extent presents the appearance of granulation. The sudden and extensive increase in the discharge of pus, seems to admit of a more ready explanation from the powers which external secreting membranes have of producing that fluid, without previous ulceration, while the extent of the granulations would lead us to suspect the

\* In the natural state of the disease, before the adoption of blood-letting, the quantity of matter discharged must have exceeded several ounces in the day.

antecedence of the latter action. This appearance of granulation, besides the interesting inquiry which their formation on this part presents, from the great luxuriance with which they sometimes increase, becomes a symptom of considerable practical moment. Sometimes they produce a continued and equal enlargement of the inner membrane of the palpebra, from which they arise, at other times there is the appearance of clusters formed by their greater luxuriance in one place than in another. In either case they are apt to protrude from beneath the palpebra to which they belong, producing a great degree of eversion, which often remains after the removal of all violent symptoms, a troublesome and inveterate complaint\*. It seems to occur to the greatest extent in the upper eye-lid, but is more tedious in its removal from the lower. To this circumstance, perhaps, may be attributed the greater proportion of cases which returned

\* Vide annexed engraving, No. 1.



from Egypt, having the remaining symptom in the lower palpebræ, more than to its more frequent occurrence in that, than in the upper. This effect of the disease, besides the uneasiness which it occasions to the patient, by preventing the free evacuation of matter, obstructs also the accurate observation of the eye. When the patient wishes to avoid any application, by forcibly shutting the eye-lids, they are protruded to a much greater extent, and although easily returned, unless carefully supported, are always apt to relapse. When the swelling and granulation of the palpebræ has so much subsided as to admit of the eye being examined, the adnata of the eye presents an appearance very similar to the florid red granulations of the palpebræ, disposed in a variety of folds, or doublings, resembling more the valvulæ conniventes of the small intestines, injected with vermilion, than any thing else to which I can compare them, having no longer the tumid appearance which the effusion in the first instance occasions. As

I never could direct the focus of a glass, whose powers were worth employing, to the surface of the adnata, where it covers the eye, on account of the enlargement of the palpebræ, I cannot say whether this appearance was caused by granulation, or a mere increase of the natural parts. I am inclined rather to adopt the latter opinion, from the ease with which the tears seemed to pursue their usual course, amidst all this apparent confusion of the external parts, to admit of which, as their secretion was much augmented, a proportional relaxation of the ducts must have taken place, a contrary state might have been expected, if the enlargement proceeded from the addition of new parts. Any exertion in the removal of the bandage from the eyes, produces an increase of this secretion, which finds its way so readily into the nose, as to excite instant sneezing; in some cases, on taking off the compresses to examine and clean the eyes, the quantity of tears was so great as to irritate the epiglottis. In addition to the sudden increase of tears

from any irritation, there is a great irritability of the muscles of the face in the advanced stage of the disease. If the face is unexpectedly touched, and even when the patient knows that the bandages are to be removed from his eyes, the first application of the hand often throws the muscles into violent action, though the patient is perfectly free from the dread of any painful sensation which the dressing of the eyes might occasion, but which, by removing the matter, always gives relief.

In general, before any view can be obtained of the eye itself, the disease has begun to yield, either from the cessation of its powers, or from the efficacy of the treatment, leaving, besides these remains of the actual disease, more or less permanent injury, according to the violence of the preceding symptoms. In many cases, as may be supposed, from the great number of new vessels which are formed over the whole surface of the eye, and from the long continuance of the disease, opacity of a greater or less portion of the



cornea, is a very common occurrence. In the case of which the engraving, No. 2, is a resemblance, the opacity was formed by the adhesion of the relaxed adnata, as represented in the plate; but the general cause of opacity is an ulceration of the surface of the cornea.

The line of ulceration can be distinctly traced surrounding an opaque speck, and what has appeared singular to me, in some cases which I attentively examined, this line of ulceration did not immediately surround the opaque spot, but seemed to include part of the sound cornea, in the centre of which the opacity was formed, which, by degrees, spread over the portion included by the ulceration. Opacity, although a frequent cause of the loss of sight, when it occurs in one eye, seldom destroys the vision of both in the same individual. In the latter case the disease has in general assumed its most violent form, that is to say, the external disease is accompanied by the frequent occurrence of the paroxysms of pain, in checking the return of which, if no means prove

effectual, a rupture of the cornea seems an almost unavoidable consequence. The time at which this event takes place is seldom the same in two patients, while some experience the daily recurrence of these paroxysms for a number of weeks before it is produced, in others the second or third attack, by effecting it, gives a temporary respite to the patient ; for even this melancholy event does not afford a termination to the disease. It has been already remarked, that the pain is seldom present in both eyes at the same time, and although in a few cases the attacks alternated with each eye, the rupture of one eye was more usually produced before it affected the other. In some cases where both eyes were in this way destroyed, the patient had no recurrence of the pain for some time after the rupture of the first, while in others the pain almost instantaneously shifted to the other eye, and while the same event was taking place in that, by the cicatrization of the former, it was rendered again liable to the same accident, which in the second instance, was preceded by as much pain

as in the first. From the distinct sensations which the accident uniformly give to the patient, accompanied with a copious discharge of scalding water, we seldom remain ignorant of the event having taken place, but as it generally happens when the disease exists in its greatest violence, and when the swelling of the external parts is so great as to prevent an examination of those immediately concerned in this event; it was a long time before I could ascertain the appearances which accompanied it. As, however, among the other changes which the disease assumed, the external swelling has been in many cases not so much increased as to prevent the inspection of the eye at the time of its rupture, I have had opportunities of more accurately observing the changes induced by this event.

In every case where the sensation of rupture of the cornea is decidedly felt by the patient, and described as accompanied with the discharge of hot fluid, when the swelling of the palpebræ subsides, the sight of the eye is invariably found to be



destroyed, and the cornea so much deformed and altered in structure, as perfectly to account for the obstruction of the light, while analogy would naturally lead us to infer, that this alteration in its structure has been produced by the violence of the disease, previous to the occurrence of its actual rupture.

A more accurate inspection has now taught me, that any visible alteration in the cornea is an event subsequent to its rupture. In the first case in which I traced the steps of that process, I examined the eye before the accession of the paroxysm which was terminated by the rupture of the right cornea, in which there was not at that time the least perceptible alteration; the patient did not see with his usual distinctness; and the iris did not contract much by exposure to the light. I found the eye in the same state after the accession of the pain, when the repetition of the examination, as is usual, had no effect in increasing it; it continued for about two hours, when he felt the cornea give way, and scalding

water rushed over his cheek. On again examining the eye a short time after, from the natural appearance it seemed to possess, I was inclined to doubt the accuracy of the sensation, and to think that too much reliance had been hitherto placed on it. The patient now saw with more correctness than before. My attention was at last attracted by a small line which extended across the lower segment of the cornea, and which remained without any alteration after the eye was washed with tepid water; but as any attempts to ascertain the nature of this line gave uneasiness, its examination was left till next day, when I found it more visible along its whole extent, from a slight opacity which accompanied it, and which daily increased till the greater extent of the cornea was not only opaque, but projected in an irregular cone. As this alteration of structure went on, the vision which continued for some time after the rupture more correct than before, became completely obstructed. Other cases have

occurred which, by corresponding with the above, confirm the account I have now given, from which it appears that the aqueous humour escapes by a division of the cornea, nearly as clean as if cut by a knife, and that it is to the attempts of the part to effect a reunion under the presence of disease, that the future deformity is owing. Were the disease to subside immediately after the rupture of the cornea, this accident in all probability would not be attended with much permanent injury to the sight; but as, besides the obstacles which the presence of the disease occasions to its healthy re-union, the same causes which produce the first rupture continuing to operate so as to produce a second, or a third, the deformity becomes further augmented, and the termination with respect to vision is proportionally unfavourable.

In some cases portions of the iris are entangled with the diseased cornea, but in no case have I ever found any formation of pus, or even a deposition of lymph in the chambers of the eye, the internal



parts of which appear always perfectly natural, and leave no room to suppose that the cornea is ruptured by previous disease\*. It would be useless to enumerate the variety of appearances which the cornea assumes after its rupture: it generally produces impartial and irregular tumours; the globe of the eye seldom suffers any diminution; and in a few cases the whole circumference of the cornea has been observed to project, as is more frequently the case in Egypt. In one case the cornea was completely perforated by a small point of ulceration, which began on the external surface, and which produced a circular opening in its centre, which, however, was repaired without much permanent injury.

No part of the disease is more uncertain than the cessation either of the pain,

\* The following observation of Sennertus adds to the generality of the fact. Lib. ii. cap. xxi.

Causa videlicet rupturæ corneæ est vel externa prece-  
dens, scilicet ulcus, aut magnum humorum affluxus  
a quo oculus ita destenditur, ut medius crepet et  
humores effundantur; cujus rei historiam adnotavit  
Ambrosius Paræus. Lib. vi. cap. 13.

or of the external symptoms: the latter continue longer than the first: in some the swelling, vascularity, and granulation, after remaining stationary for a considerable length of time, rapidly diminish; in others this process goes slowly and gradually on; in either case it retraces the steps it had taken in its progress. The granulations in the palpebræ disappear first; the tumefaction of the adnata gradually subsides from the cornea; the part nearest the latter first assumes its natural appearance, and presents a ring of white, similar to what was observed in the progress of the disease. This gradually enlarges till the swelling and vascularity are confined to the reflections of the conjunctiva about the inner canthus, and at the bottom of the lower eye-lid. The palpebræ have a relaxed appearance; matter still forms on their internal surface, and in this state they may continue for a series of months after the eye (to a person unacquainted with the disease) may appear perfectly healthy; but on examin-

ing the lower eye-lid minutely, besides the vascularity of its internal surface, a slight degree of ulceration may often be detected at its lower part, where an accumulation of pus is likewise apt to take place. In this state of the disease, any irritation either to the eye or to the system is sufficient to cause a relapse as violent as the original attack, rendering the termination of the disease very uncertain to the patient, while there is little reason to doubt that it continues capable of infecting others. In a few cases dimness of sight, in others an immobility of the eye remained after the cessation of all violent symptoms.

The rapidity with which the opacities disappear, when their removal once begins to take place, is a circumstance not only interesting in the history of the disease, but an important guide to our practice, and from this peculiarity in many cases which were supposed to be perfectly hopeless, the patients recovered such an extent of vision as to make them at least



of some use to themselves. One case no less characteristic of this feature of the disease, than interesting from its general import, occurred in a man during his convalescence from Ophthalmia. Some pectoral symptoms, to which he had been long subject, suddenly assumed the appearance of pulmonary consumption, which proceeded in a rapid manner towards its last stage; five days previous to his death he was seized with a violent aggravation of the hectic fever, and the other symptoms, and his death was hourly expected: at this time to the surprise of all his attendants, the opacities, by which the vision in both eyes had been long obstructed, disappeared with an amazing rapidity, and a short time before his death, his vision became nearly as distinct as ever\*. On

\* The rapidity with which this took place, perhaps bears some analogy to the changes which are observed to take place during the progress of that disease, in parts whose structure approaches nearest to that of the cornea, as the nails and teeth, and shews the increased action which prevails throughout the whole absorbent system.

examining the eyes of this patient after death, the remains of the opacity were found to extend to the internal surface of the cornea ; it was in that part slightly corrugated ; and there was a very partial adhesion of the iris to it in both eyes, which was not discernible when alive.

The total strength of the second battalion of the 52d, from which this description of the disease has been taken, was somewhat above seven hundred men : six hundred and thirty-six cases of Ophthalmia, including relapses, were admitted into the hospital, from August 1805, when the disease commenced, till the same month in 1806 ; of these, fifty were dismissed with the loss of both eyes, and forty with that of one. It did not appear to be decidedly more violent in any one of the slighter shades of temperament than another, and either eye seemed equally liable to experience the violence of the disease. Scrophulous people had always a tedious recovery from the ex-

ternal symptoms, some ulceration of the tarsi succeeding, which was, as is usually the case in such people, difficult to overcome.

In robust and plethoric constitutions the symptoms were more violent; but at the same time they yielded with more certainty to blood-letting. In women the disease was uniformly milder than in men; and in children according to their infancy; for accordingly as the age approached to puberty, from either side, the disease was in general more fatal in its effects.

Of the imperfection of the above description, nobody can be more sensible than the author. Many difficulties might have been avoided by a less minute detail, but as every fact is of equal importance in its relation to the rest, it would be wrong to select those which, from their singularity or individual importance, may strike the mind of the observer. I have been unwilling therefore to suppress any circumstances which may in the least contribute to the development of the dis-



ease, particularly as from the mode of treatment which will now in all probability be adopted in every future occurrence of the disease, the natural progress of its symptoms will not, perhaps, again be witnessed to the same extent. The natural difficulty which attends the description of a disease from such a multitude of cases, and the unfavourable circumstances, under which these notes have been prepared for the press, must plead the excuse for that want of arrangement which should conceal the effects of descriptive minuteness.

*Observations on the Nature of the Disease.*

Although no disease remains in the modern systems of nosology, resembling the one which has just been described, its analogy to the *Ophthalmia Vera*, *Humida*, and *Lippitudo*, of the ancients, is too striking for a moment to be overlooked. In its external appearance it bears a strong resemblance to the affection, which Mr. Ware has described with much accuracy, as peculiar to children; from the similarity of that affection we learn the general tendency of the parts to assume this form of disease, while the peculiarities of the present affection may be ascribed to the specific nature of its cause. Its more general features bear a marked affinity to those, which characterise a common affection of another secreting membrane.

Gonorrhœal *Ophthalmia*, as described by authors, bears not only a general re-

semblance to this, but occasionally observes a periodical form in the return of its pain\*. It is, however, from the general characters of gonorrhœa, when seated in the urethra, that the analogy of the diseases may be drawn, and the general nature of the action explained. Both are excited by the application of a specific matter in its appearance very nearly alike. When either has once commenced, although we may moderate its violence, we are incapable of entirely arresting its progress. That a true virulent gonorrhœa cannot be removed by local means, without producing some greater injury, is a fact now generally admitted. When the symptoms of purulent Ophthalmia have decidedly commenced, we possess as little power in totally removing them, although we may moderate by general means, their future violence. The knowledge of this fact might be of use in preventing the adoption of violent local

\* Sauvage's Nosolog. Method.



applications to overcome the disease, in experience had not proved their deleterious effect.

At what time the disease takes place after the application of the matter, is as yet uncertain. In some cases it must have taken place very early, and I am inclined to think it does so in all. Both Mr. Peach and Dr. Walker had the matter conveyed by accident to their eyes, but by careful washing it was prevented from producing the disease; the latter, however, assured me that he felt a smarting pain for some time after.

While the increased action on the exterior surface of the conjunctiva, which gives rise to the formation of pus, is going on, a serous effusion takes place behind. It is necessary to distinguish this from œdema of debility. It seems no less the natural effect of the disease upon the surface of the conjunctiva, which is connected with the parts beneath, than the purulent discharge is the consequence of the same action on its external sur-

face. When the disease becomes deeper seated, the effect corresponds with the structure of the part. Here it was observed when describing the disease, that in no instance did the formation of pus ever take place, but that the increase of the aqueous humour was the uniform consequence. This effect of the disease, and the great extent to which blood-letting may be carried, are so characteristic of membranous inflammation, as in a great measure to outweigh the absence of any inflammatory affection of the system. Other symptoms of an internal affection of the organ, as the dimness of sight, dilated pupil, &c. seemed rather the effect of the preternatural distension than of the actual disease.

From this conclusion, however, I would except the pain, which, from the time of its occurrence and other particulars, which have been mentioned, seems no less the effect of the increase of the action by which the chambers of the eye are distended, than of the distension itself. The occur-

rence of the pain in the head and face, where it was often very intense previous to any swelling, and even when the latter did not take place at all, strengthens this opinion. This symptom, which in many respects is so singular, is noticed by all the old writers, and seems to have influenced the treatment as a separate affection\*. The following quotation shews that it accompanied a contagious Ophthalmia which occurred at Breslaw.

“ *Gravem epidemicam Ophthalmicam describunt medici Vratislavienses cum vehementi capitis dolore, et cæcitatis secuturæ periculo junctam, adversus quam nil erat utilius quam profluvium alvi, sive sponte naturæ motum, sive pharmacis excitatum †.*”

The intermittent form of this symptom, though not expressly mentioned by any of the writers whom I have consulted, is recognizable from the force with which they all dwell on the violence of the ex-

\* Vid. Annot. Caus. in Ovicinna.

† Phan. Dissertat. Ludwig Script. Nosolog. select. Tom. iv.



acerbations, a term which at first I readily adopted, until the circumstances which have been mentioned shewed me the impropriety of the word which can only be applied to what is in a degree more or less continued. The frequent metastasis of the pain is, like the same phenomenon in other diseases, perfectly incomprehensible. Pain being only an attribute of particular actions, the same action which gives rise to it in the eye, seems to be translated in those cases to other parts, as is evinced by the circumscribed swelling which succeeds.

The absence of the *intolerantia lucis*, while it renders the disease so different from the common Ophthalmia, is an occurrence not uncommon in other affections of the eye, which have been classed with inflammations\*, and is by some ascribed to the violence of that action, though in this case I am more inclined to attribute it to the increased contents of the eye. The internal symptoms bear al-

\* Sauvage's Nosologia Methodica,

together a stronger resemblance to the *Ophthalmia tenebricosa*, or *Hydrophthalia* of the Greeks, as described by Sauvage, than to any other species I have met with.

In order to lessen both the action which gives rise to the effusion, as well as to prevent the mischief it occasions, a free use of *Digitalis* might probably be of service\*. From the intermittent form of the pain, some benefit might, perhaps, be derived from the exhibition of arsenic. Other remedies which are employed to interrupt a paroxysm of intermittent fever, are tolerably successful in this, and in those cases where either the eyes have been already lost, or where, from debility, blood-letting cannot be carried to the necessary length, such a treatment may, perhaps, be of service. In one case, where the disease had already produced staphyloma, the cornea was punctured

\* The success of this medicine, in some cases of hydrocephalus, seems also to point it out as a fit remedy.

with the view of relieving the pain, by the evacuation of the aqueous humour, but without any benefit.

In another, before blood-letting was so much relied on, and where the pain was situated in the head, I completely and instantly relieved it by the application of a couple of tourniquets, by which the circulation in an upper and lower extremity of opposite sides was interrupted.

These observations are founded more on speculation than experience, and are therefore separated from those, which are derived from the latter source alone. In employing any new treatment we must always keep in view the important function of the organ, and the rapidity with which it may be destroyed, if our measures are not successful in opposing the disease.

The absence of general fever is a circumstance which, from the singularity of the fact, and the contrary testimony of other authors, I have been the more accurate in ascertaining. In those cases where



the pulse underwent any of the changes which have been mentioned, if it is relied on as a mark of the disturbed state of the system, decidedly shews that this is the consequence and not the cause of the local affection, as it always followed the aggravation of the disease of the eye. The effect, which violent pain has upon the pulse, has never been accurately known ; but as the changes which the pulse in this instance suffered, did not resemble those, which from the most established principles in medicine, we would expect to arise from local inflammation, the violence of this symptom seems to offer the only solution. The effect of pain upon the system may justly be supposed to be increased in consequence of debility, and upon this supposition the more frequent alteration of the pulse, when the plan of depletion was so extensively adopted, may be in some measure accounted for. A case, however, which is too remarkable to be overlooked, is directly contrary to this con-

clusion, in a patient in whom the disease was very violent, and who owed his recovery to the determined use of the lancet, the pulse, which was, during the violent stage of the disease, soft and upwards of 140, continued for a week after the cessation of the disease at 120, when his health (which indeed never had been interrupted) was, to appearance, and according to his own feelings, in the most perfect state.

I shall conclude these hasty observations with the following quotation from Celsus, which is not only an accurate description of the disease, but shews the frequency of its occurrence in his time.

*“Pejus etiamnum est,” (genus videlicet lippitudinis) “ubi pituita pallida aut livida est, lachryma calida aut multa profluit, caput calet, a temporibus ad oculos dolor pervenit, nocturna vigilia urget, si quidem sub his oculus plerumque rumpitur, votumque est, ut tantum exulceretur. Intus ruptum oculum febricula juvat. Si foras jam*

*ruptus procedit, sine auxilio est. Si de nigro aliquid albidum factum est diu manet. At, si asperum et crassum est, etiam post curationem vestigium aliquid relinquit.*”—Lib. 6. Cap. 6.



## TREATMENT.

The contradiction, which appears in the use of the various remedies, which have been transmitted to us for the treatment of Ophthalmia, required such an instance as the present to reconcile to our minds the practice of the ancients, with their usual knowledge of disease. The same contrariety which we still observe in the recipes and plans of treatment of the earliest authors, is strikingly adverted to by Celsus, when commenting on the practice of Hippocrates—" *Curari vero oculos sanguinis detractio, medicamentis, balneo, fôtu, vino, vetustissimus author Hippocrates memori prodidit. Sed eorum tempora et causas parum explicuit: in quibus Medicina summa est,*" are the words em-

ployed by that judicious author, who attributes the apparent contradiction in the practice which he quotes, to the proper cause. The following relation of the means which were successively employed to check the violence of the disease, or alleviate its symptoms in the battalion, from which the present account has been derived, will shew the justice with which such opposite remedies have been recommended; and as it was from the experience gained in this occurrence of the disease, that a mode of treatment has been adopted by which its violence has been checked wherever it has since presented itself, such a relation cannot be wholly destitute of interest.

The first cases were treated by such remedies as a slight occurrence of common Ophthalmia would naturally suggest. On the appearance of pain in the forehead, (which in the early period of the disease occurred more frequently than was latterly met with) blood-letting was had recourse to, although considered as a doubtful remedy. In some cases it was found to relieve the symptom, but it seemed to

have little influence in checking its recurrence. In using a remedy, concerning the propriety of which we are not well assured, (particularly one which modern practice employs with so much caution as venæsection,) some decided benefit is necessarily required to urge its repetition, when it is not indicated by those changes in the pulse or system, on which we rely for the rules of its employment. The practice was by degrees neglected, and reliance chiefly placed on local applications. The use of cold was carried to the utmost extreme by means of snow, and by solutions of neutral salts, applied either with compresses or in poultices. Potatoes scraped down, so as to form a pulpy mass, were for a long time employed, and the preference was very generally given to this application.

Solutions of opium, both watery and vinous, were extensively employed both in the beginning, and in the more advanced state of the disease. In the former case, they had no effect in checking its



progress, and although, in the latter, they sometimes afforded relief, it was of so temporary a nature, as to hold out little encouragement for the repetition of their application. Warm applications were tried in some cases, in a few of which they afforded more relief than was experienced from any other means; but while they were thus useful in allaying the pain, they seemed uniformly to protract the disease, and to increase the violence of the external symptoms. The benefit which arises from the opposite applications of heat and cold, is no less paradoxical on the first view, than reconcileable with the general principles of disease. The extreme facility, however, with which, in this affection, the parts yield to distension, unattended with that degree of preternatural sensibility, which requires to be relieved by fomentations, seems rather to point out the employment of such means as will most directly lessen the diseased action. Cold was for these reasons persevered in during the whole course of the disease, the warm applications being laid

aside on account of the actual increase which they seemed to cause to the external disease; and although, at times, they diminished the violence of the pain, this circumstance did not compensate for the protracted duration of its recurrence. It is a circumstance strictly to be attended to in the disease, that however urgent the pain may be, our attention should be more directly given to the action on which it depends, which, if not checked, may after the cessation of the pain, produce the rupture of the cornea. While every credit, therefore, is due to the testimony of those writers, who recommend the employment of fomentations from the relief they afford, their own experience has proved their inefficacy in preventing the fatal termination of the disease, to oppose which is the grand object of all our endeavours.

From the little benefit which was derived from their external applications in checking, or even in relieving the disease, different means were employed to affect the system, which were more guided by experiment, than by any thing that

could be inferred from the state of the functions. In several cases the mouth was affected by the muriates of mercury ; but the effects of this practice were too unfavourable to admit of their being long employed \*. In others, attempts were made to keep the system under the continued action of opium, which was productive of as little benefit. It was given in small doses every three hours, whether the pain was present or not. Throughout the whole disease this powerful remedy was of little use, in enabling us either to combat its violence, or to give a temporary relief to the patient. In those cases, where, in the absence of pain, there remained an inability to sleep, it was eagerly requested by the patient, although it was seldom productive of the wished-for effect ; and in no case, where the violence of the pain called for immediate relief, was its largest dose of much avail. Cinchona was given at one time to all the patients

\* The failure of this practice, which, I suppose, was adopted from the experience of Mr. Ware, in cases of intermittent Ophthalmia, only shews the difference in the two affections, and the importance of the caution he has given against the hasty adoption of this remedy.



in the hospital. At this time the disease suffered an amelioration, but again relapsed to its former degree of violence; this, however, was attributed, and with some degree of probability, to an increase in the diet, which was raised from low to half, and in some cases to full \*, a circumstance which always seemed to aggravate the disease. Along with these plans of general treatment, local means were not neglected, but were varied to all the articles to which experience could give the least support. These were either dropt into the eye, applied in the form of lotion, or in that of ointments; of the former, solutions of sulphate of zinc in different proportions, the aqua camphorata, the aq. sapharina †, aqua litharg. acetat. diluted nitrous acid, saturated solutions of alum, solutions of muriate of mercury, the Ophthalmic cream ‡, were the longest resorted to: the lotions were mixtures of vinegar and water, the lotio Ophthalmica, solutions of opium, &c. The citrine ointment, and an ointment with differ-

\* Vide Diet Table in the Appendix, No. 3.

† Vide Appendix, No. 2.

‡ Ibidem.

ent proportions of the red nitrate of mercury were used, without being of further service than that of preventing in the cases where the discharge was not very copious, the agglutination of the tarsi, a circumstance which should always be attended to. In addition to the use of these local remedies, counter irritation, by means of blisters, was employed through the whole course of the disease. These certainly seemed to have considerable efficacy in lessening the violence of the pain, when their stimulant effects began to take place; this, however, frequently did not happen, until after the natural termination of the paroxysm. In some cases, when applied at the time when the palpebræ were beginning to enlarge, they rather seemed to aggravate this symptom; more generally, however, they lessened also the violence of the external disease. They were applied behind the ears, to the temples, forehead, and on the cheek, as near as possible to the eye; in the last of these situations, they seemed to be of the greatest service. Little benefit result-

ed from keeping them open with stimulating dressings. A fair trial was given to setons, but from the slight degree of irritation they produce, little benefit was derived from their immediate operation, and still less was to be expected from the discharge they might excite. On the first attack, and on the aggravation of every symptom, leeches were tried with little or no advantage. Scarifications were performed with the greatest care, and in the earliest stage of the disease, on the adnata, both where it covers the eye, and on the palpebræ. In some cases the vessels were merely divided, in others excisions were employed, and I am sorry to say the effects corresponded in every case with the testimony given on this subject, by those gentlemen who witnessed the disease in Egypt. If this practice does not succeed in completely removing the disease, it may naturally be supposed to tend to its aggravation. As long as the disposition to the disease remains, every scarification only gives rise to the production of new vessels to repair the injury done to



the old, thus adding a fresh stimulus to the inflammation already existing. If any other proof could be wanted in addition to the actual experience of the aggravation of the disease from this cause, the severe relapses occasioned by the adoption of the same operation, for the removal of opacities of the cornea, before the disposition to the disease had entirely subsided, will place the impropriety of the practice beyond dispute. Scarifications made in the palpebræ, or in the conjunctiva, covering the eye, after the tumefaction had taken place, in order to evacuate the effusion, where they were not productive of actual mischief, were not attended with any beneficial effects.

Of the remedy which I have next to mention, and which from its general importance, should have had a prior consideration, I cannot help speaking with less confidence. In every author whom I have consulted on this disease, whether ancient or modern, purgatives have been recommended as a remedy superior almost to every other. In warm climates, evacua-

tions, by their means, form a powerful substitute to that by venæsection. Since the appearance of the disease in this country, they have been employed with a success which was never met with in the present instance. In it they were early had recourse to ; different articles were made use of, as calomel alone, and combined, jalap, gamboge, colocynth, &c. A larger dose in general seemed necessary to produce the usual effect, yet so little benefit resulted from their employment, that even in the want of more efficacious means, they were not rigorously persisted in. In many cases emetics, given on the accession of pain, were much more successful, and in no instance did their operation in the least aggravate that symptom. When the pain is apt to shift to the head, and in such cases, as will be afterwards noticed, when blood-letting is less advisable, they will often be found of much service.

Under such practice, the disease, as has been observed, occasionally assumed

a form more or less severe, but no conclusion could be drawn with respect to the proper mode of treatment. About the beginning of May it was uncommonly mild, and hopes were entertained, that this change for the better might be permanent. On the 9th of that month the battalion marched from Hythe, where it had now suffered under the disease for nine months, to the barracks at Riding Street, a distance of twenty miles. They accomplished the march in one day, which though intensely hot, did not seem to have any particular effect in aggravating the disease. On the third day, after their arrival, the number of new cases was somewhat augmented\*, and those already in the hospital became aggravated almost instantaneously. The disease continued to extend more rapidly, and seemed daily to assume a form more violent. The hospital, which fortunately was larger than the

\* The greater frequency of the disease may be accounted for from the rooms of these barracks containing a greater number of men.



one at Hythe, containing, without being crowded, seventy-one patients, with their attendants, was in a short time nearly filled with this complaint alone, besides those in whom the state of the disease did not render their admission necessary. Still no plan of treatment seemed to produce any decided advantage, and under the increasing severity of the symptoms, the duty of the medical attendants became extremely painful. Things were nearly in this state when Mr. Knight, the Inspector-general of army hospitals, came to ascertain more accurately the nature of the disease, and suggest such alterations as might appear to him necessary in the treatment. The plans, which he laid down, were no less decisive in themselves, than successful in their issue. As I had the satisfaction of being sent in the capacity of hospital-mate, to assist the medical staff of the regiment, when those plans were put in execution, I had an opportunity of seeing the natural state of the disease, and the pleasure of witnessing its violence sub-

duced by a mode of treatment no less novel to those who attended it from its commencement, than to me. The bare narrative of facts is the highest compliment which can be paid to the judgment displayed on this occasion ; and I shall endeavour to state them with the accuracy which its importance demands.

The first arrangement that was made, was to keep the hospital for the accommodation of cases of Ophthalmia alone, and to inspect with care, the healthy part of the battalion, in order to detect the disease on its first appearance. Separate barrack rooms were allotted for the reception of those cases, in which the disease had not proceeded so far as to make their admission into the hospital necessary, and of those, who had been dismissed after the violence of the disease had abated. The whole were divided into four classes, according to the violence of the present symptoms. The first, third, and fourth, consisted of the slighter cases, and were arranged in different barrack rooms, according to the degree of

their severity. The second comprehended the worst cases ; these were taken into the hospital. When the healthy part of the battalion was afterwards removed to Maidstone, more room being obtained for the sick who were left behind, they were again sub-divided into other classes. Perhaps it might have added to the accuracy of the treatment, if they had been divided not only according to the degree, but also the stage of the disease.

The urgent nature of the disease, and the inefficacy of the previous treatment, demanded the most active measures ; but at the same time it required much professional knowledge to guide them. Notwithstanding the undisturbed state of the system, and apparently in opposition to the experience which had been already gained, Mr. Knight proposed the most decided antiphlogistic regimen, with the regular exhibition of purgatives, and above all the use of the lancet, with a freedom far beyond what had been formerly thought of.



The decided advantage which has resulted from venæsection, when carried to a proper extent, sufficiently shews the cause of its former inefficacy. I must own, that after having examined the disease, I could with difficulty, at first, reconcile my principles to this practice, but the success was beyond all dispute. I have now seen it carried farther than I could have dared to suppose, and in every instance has its efficacy corresponded with the extent. When this rigorous system of depletion was first commenced, it was generally employed in those cases where the violence of the disease threatened the rupture of the cornea. In those it was resorted to on the accession of the pain, which it sometimes relieved, without seeming to prevent its recurrence, at others no sensible benefit was derived. Under such circumstances, it was often repeated to the eighth or ninth time, without the decided benefit which followed its more extensive employment. I am even inclined to think, that the relief which

was attributed to the venæsection, was, as it was then performed, the effect of the natural termination of the paroxysm. But allowing that it produced this temporary relief, the benefit which resulted from checking in succession a number of paroxysms, seemed hardly to compensate for the expense at which it was obtained. As yet we had no certain rules for regulating the quantity of blood—seldom more than 3xxx were taken at a time—and it was chiefly had recourse to during the paroxysm. The bleeding was afterwards adopted more fully in the early stage of the disease, and the quantity taken away was only measured by the effects it produced on the system ; when all doubts as to the propriety of the practice ceased, from the benefit which immediately attended it. The disease seems now to be more under our controul, than any other in which the same remedy is employed. A few cases will still occur in which it extends to the internal points of the eye ; but these instances are rare,

and merely shew the violence with which it would occur, if opposed by less vigorous measures. In every case, where on the first appearance of the disease, bleeding is employed to the proper extent, its effects are no less perceptible to the patient, than to the surgeon. The diminished vascularity is the first effect which ensues, and before the end of the operation, the eye will often become nearly of its natural appearance. The cessation of all uneasiness should be the *sine qua non* of stopping the flow of blood. This in a robust man will often not be obtained until thirty or forty ounces have been taken away, and in a few, *deliquium* will take place before it is effected; one or other of these effects should always be procured. By the repetition of this remedy, on every aggravation of the disease, whether in the appearance of the eye, or in the sensations of the patient, we may, in ninety cases in the hundred, prevent it from arriving at the second stage. If, how-



ever, in defiance of this treatment, it assumes its violent form, the same means are, if possible, to be more fully persevered in. In this stage, the patient will often have bleeding to a greater extent; in many, fifty or sixty ounces must be taken away to relieve the pain, or bring on syncope; but we can always rely with certainty on the benefit which will ensue when either of these effects are produced. In every case, where such practice is employed, however violent the tendency of the disease may be, its fatal termination will infallibly be prevented, and with much less expense to the patient, than by smaller and more frequent bleeding. According to the rules above laid down for the extent to which this evacuation is to be carried, the quantity taken away must be in proportion to the strength of the patient, hence few cases will occur where the practice cannot be put in execution.

With the same confidence with which this extensive venæsection is recommend-

ed, I would dissuade from a less free use of the lancet. In the former case, it appears to operate not so much by lessening the disposition to the disease, as the power of the constitution to carry it on ; in the latter, it debilitates the patient, without producing either of these effects. In every case where the patient was most willing to have the operation repeated, it had formerly been carried to the greatest extent. The considerable time before the practice was so generally reconciled to our minds, was in consequence of its too sparing adoption, and should serve as a seasonable caution to the practice of others ; and in adopting the practice, the first rule is to overlook every thing, except the disease. The blood was sometimes taken from the jugular vein and temporal arteries, without any superior advantage. From the great ease with which the quantity of blood can always be obtained from the veins of the arm, in a given time they were generally resorted to.

In a former part of this treatise, it was mentioned that changes in the pulse were more frequent after the adoption of the treatment now related. These changes were seldom the immediate result of venæsection, and the only alteration which can be accurately ascribed to it, was a greater degree of compressibility, and being more affected by the posture of the patient. The appearance of the blood was often no less at variance with the practice, than the general state of the system. In some cases, where venæsection had been more frequently employed, in consequence of its effects having been productive of less good, the blood remained cupped and buffy, until, from the debility of the patient, or from the inefficacy of the treatment, the operation could be no longer repeated. Such instances were, however, extremely rare; in those the quantity taken had not been sufficiently great. In the greatest number of cases, where bleeding was most exten-



sively employed, no such cupped or buffy appearance took place \*.

The alteration which this treatment produced in the symptoms of the second stage, was very remarkable, nearly the same degree of tumefaction took place both in the palpebræ and the conjunctiva, where it covers the eye; the former, however, were no longer subject to the same degree of eversion, the quantity of pus

\* The effects which the practice produced in the blood itself, were interesting. They seem more referable to the general turns regulating the state of this fluid, under such copious depletion, than to the effects of the disease. The change which took place in the relative proportions of the serum, and the crassamentum, were such as might be expected. The serum, in those cases, where the bleeding was not carried beyond 3 xxx, but repeated to the 10th or 12th time, had its specific gravity gradually lessened to that of water, to which, in its healthy state, with some patients, it was about 1,082 to a 1000. In cases where the quantity of blood taken at a time was much greater, the serum, sometimes, became heavier, having a tinted and milky appearance, with a much smaller quantity of acid than is generally required; it formed a firm coagulum, without leaving any serosity. This addition to the serum, seemed evidently to be produced, at the expense of the crassamentum, to which the red globules did not adhere with their usual tenacity, but mixed with the serum on the slightest agitation.

was much diminished, and in no case did granulation become a troublesome symptom. The swelling of the conjunctiva of the eye was seldom accompanied with the same degree of vascularity; in common cases it presented the perfect appearance of watery vesication. The pain, though equally severe, lasted above two or three hours at the utmost, and was much less regular in its recurrence. Besides, therefore, the actual reduction of the numbers in which the disease advanced to the second stage, the symptoms were also rendered much less violent by the early adoption of the treatment recommended. This practice, which has so fully met the exigency of the case, has not, perhaps, from its decision and its efficacy, a parallel in the practice of medicine—and every person who has seen it employed, is sufficiently convinced of its propriety; but those who have experienced the mortification of seeing every other means unequal to combat the disease, are best able to express a just sense of its benefits.

In the last edition of Mr. Ware's *Treatise on Diseases of the Eye*, several cases are related of a painful affection of the eye, in which, although there was no apparent inflammation or disturbance of the system, bleeding was very successful.—Making every allowance for the difference in the constitution of these patients, from what is met with in a regimental hospital, a still freer use of the lancet would probably have been found doubly efficacious. Before we were aware of the extent to which it is necessary to carry the bleeding, in order to make it successful, cases often occurred where the exhibition of wine, or the strongest stimuli, seemed more applicable. This may be best illustrated by a particular instance :—Serjeant Webster had been four days affected with the disease, in its second stage—he had been four times bled, in order to relieve the pain ; but from the occurrence of syncope, a large quantity had never been obtained. I saw him about five in the morning, in con-



sequence of the severe return of the pain, when I found his pulse small and irregular, and his skin cold and moist; he had been bled the preceding evening, for the same symptom, with very little relief. Under these circumstances, I gave him tinct. op. gutt. xl. with as much aq ammon. from which very little effect was produced—he dozed till ten in the morning, when the pain continuing, he was again bled, and fortunately a larger quantity was obtained, than at any former time. He had no return of the disease for two days, when, upon another attack, he was bled to a still greater extent. The violence of the disease, however, did not seem to be overcome, and the bleeding was repeated once more, with still greater advantage, and he escaped without any injury to the eye, which, at one time, there was little hopes of saving. In this case, the disadvantage arising from the want of venæsection in the early stage of the disease, was very evident, from the difficulty with which

it was afterwards subdued. After the bleeding was employed to the proper extent, the pulse became somewhat more full, and he complained of considerable heat and thirst, which are always more favourable symptoms than faintness and debility. This case suggests a very obvious question, in which it is necessary to decide in every other. In diseases strictly inflammatory, the symptoms are not the only guides we possess in regulating the use of the lancet; here, however, the first rule for its successful employment, is to disregard the state of the functions, as little information is to be gained from the external disease, the presence or the absence of pain becomes our only indication for its use. If we employ it in the former state, the disappearance of that symptom becomes a proof of its efficacy. While, on the other hand, there is reason to suppose, if it had been employed, so as to prevent its accession, the benefit might have been still greater. After the accession of the

second stage, on the least alteration in the state of the pulse, the temperature or appearance of the patient, which marks an inflammatory action, there can be no doubt as to the propriety of repeating the operation ; but in the absence of these, and all local uneasiness, it becomes so difficult to decide when the remedy should be employed, and to what extent it should be carried, that we must naturally wait for the recurrence of the only symptom which can lead to a positive decision. The efficacy of blood-letting, in this disease, when carried to the proper extent, may probably induce those who witnessed its mode of operation, to employ it with more freedom than is at present usual in other complaints. No practice deserves to be more reprobated than a hasty recourse to the lancet ; but where the employment of this remedy is at all necessary, it should be employed with decision, however contrary it may be to some of the prevailing dogmas of the day, the future debility



of the patient will be best prevented by the greater extent to which, in the first instance, it is produced, even at the expense of that fluid, which, according to Harvey and Hunter, is the "*primum vivens, et ultimum moriens*." It can scarcely be necessary to caution any one from having recourse to this practice, in diseases where theory and experience unite in forbidding it, on a supposition, that it has not been carried to a sufficient extent. Experience, with such accurate observations as led to the adoption of the practice in this case, must warrant every other application of the same remedy.

While we adhere to this system of venæsection, the regimen of the patient should strictly correspond. Wherever the disease has appeared since the history I have given, the patients have been put on the fever diet of the annexed table \*, and purgatives have been regularly given, according to the urgency of the case.

\* See Appendix, No. 3.

Nitrous salts, and sea-water were employed for this purpose in the 52d; but the benefit which seemed to result from them, was as little as has been already stated to have arisen from the more active medicines of the same class.

While by such means we lessen the violence of the internal disease, and effectually prevent its terminating in the rupture of the cornea, by the use of local applications we are to endeavour to diminish the external symptoms. Linen, dipt in some cooling lotion, should be kept constantly applied over the eyes. Such applications as experience seems to have accommodated to the different stages of the diseases, should be carefully dropt into the eye. In the first stage the aq. sappharina will, I think, be found the most serviceable. When the swelling of the palpebræ has taken place, the aq. litharg. will be found useful both in lessening the formation of the matter, and in cleaning it from the eye, which is always a grateful operation to the patient,

and consequently of much importance in the cure. The injection of tepid water, with a syringe, for the same reason, is always beneficial, and while the patient is subject to the recurrence of the pain, I should be inclined to prefer it to any other application. To lessen the swelling of the palpebræ, compresses, dipt in the aq. litharg. may be externally applied, and secured by a pretty firm pressure, which seemed often of the greatest benefit. When the swelling and other symptoms of the second stage have disappeared, a treatment very similar to what is adopted in the first stage, becomes necessary. The same attention to keep the eye and system free from any cause which may excite much action is equally necessary. The local applications may be rendered however more astringent. The aq. litharg. and Bates's camphorated water, solutions of alum, or muriate of mercury may be used with advantage. When the eyes are so far recovered as to make it necessary to continue the lotions,



they should be defended from the light by a pasteboard shade. The use of purgatives should still be persisted in, as many of the cases of relapse are to be ascribed to costiveness, and the return of the system to the standard of health should be rendered as gradual as possible. To get rid of the granulations, which take place on the everted palpebra, different remedies have been tried. This is a symptom, which has been now treated in almost every part of the kingdom, in consequence of its continuing with those men who lost their sight in Egypt. If venæsection is early and sufficiently employed, they will seldom occur, and if they do, their removal will be speedy and spontaneous. In those cases, however, where they have occurred, excision by the knife, and by the ligature, have both been tried, and have been justly reprobated. Spirit of turpentine and strong stimuli have likewise been employed, without any decided effect. Lunar caustic, as far as my observation goes, seems to be the

most efficacious application ; but a well regulated pressure, with care in relieving the eversion of the eye-lid, will in general be sufficient. As soon as they once begin to diminish, their disappearance becomes very speedy, and in a great measure spontaneous.

It has already been observed, that until the disappearance of every symptom of the disease, its consequences are not to be meddled with. When this has taken place, the treatment of opacities should be conducted as in cases, where they have occurred from common Ophthalmia. Very active measures should never be resorted to, from the danger they occasion of reproducing the disease. While, the suddenness with which this spontaneous removal is often effected, should induce us to wait patiently for this event.

During the latter part of the time that I attended to the disease in the second battalion of the 52d, some other remedies were suggested and employed by Mr. Peach, with

considerable success ; of these the affusion of cold water is the most conspicuous. Although the cases, in which it was employed, did not possess many of the indications laid down by Dr. Currie, no evil ever resulted from its use. In some cases where after the very free use of the lancet, the patients felt hot and restless, and in the very few cases, where these symptoms occurred in the first instance, the usual benefit resulted from its employment. A free use of the pulv. antim. appeared, in some instances, to assist very much the effects of the lancet ; and the local application of the aq. ammon. over the external surface of the palpebræ, or to the part of the head where the pain occurred, very often removed it ; and this will be found useful in affording relief in cases where we may not think proper to carry the venæsection to the proper extent.



## POSTSCRIPT.

SINCE the foregoing observations have been prepared for the public, I have had an opportunity of attending to a still more extensive occurrence of the disease, than the one from which the description has been taken. In the 54th foot, the Ophthalmia has raged with unusual rapidity, and as its aggravation was not opposed by the rigorous measures, which are here recommended, there were few cases in which the more violent symptoms did not occur, affording a more ample field for experience than has in any other instance presented itself at one time. From this melancholy occurrence of the disease, I have confirmed the correctness of the greater number of the observations which I have already offered, at the same time that I have seen the more general shades, which it is capable of assuming.

While its external appearance in the instance, to which I am now alluding, is alike to what I have already endeavoured to describe, the internal state of the eyes seems to indicate a disease more directly inflammatory, the light is more intolerable, and the pain, though less intense, observes a remittent, rather than an intermittent form, the pulse in the advanced stage of the disease is more frequently affected, though differing but little from the statement I have already given of its changes. An inability to sleep, without any particular uneasiness, is a more frequent symptom. The proportion of cases, in which a rupture of the cornea takes place, shews a slighter tendency to that event, while an ulceration of this part appears a more frequent occurrence, giving rise to excrescences, which, in many cases, are afterwards absorbed ; but in others, I am afraid, will prove a permanent obstruction to vision. The eversion of the eyelids, after the decline of the disease, is also less frequent than was the case in the 52d

previous to the adoption of blood-letting. This hypersarcosis, however, when produced is no less troublesome to remove; of its structure I remain still ignorant, farther than of the granulated appearance of its surface; but the elasticity, and apparent integrity of the mass, prevents me from supposing that its base is of the same construction. A swelling and in some cases a suppuration of some lymphatic glands about the articulation of the lower jaw, is a more general effect of the disease, than the few cases which I had formerly seen of it, warranted me in stating it to be. A spontaneous efflorescence and superficial inflammation of the neighbouring parts, I have now seen in many cases, to afford much relief to the internal symptoms. In the treatment, the truth of the observations which have been already offered on that subject, has received the most ample confirmation. When the disease has advanced to the second stage, without being opposed by venæsection, this remedy is then, as has already been remarked,



much less efficacious in removing it, though, if carried to the proper length, will even then seldom fail of preventing the loss of the eye. In this state of the disease of which this regiment presented so many examples, the solution of opium, dropt into the eye, during the violence of pain, was of more service than my former experience led me to conclude. The relief, however, is but temporary, and by no means certain. In all cases of more recent occurrence, the early adoption of venæsection, and its repetition upon every aggravation, has been attended with all the success which I have already detailed. To check with more certainty the progress of the disease, and thus lessen the necessity for the repetition of the remedy, the operation should, in every instance, be carried so far as to produce deliquium ;—any other measure may be fallacious ; but the effect from this will seldom be found wanting. The difference in the constitutions of the men, of which the 54th is composed, from those

in whom I first witnessed the disease, shews that this rule, as I have already remarked, is applicable to almost every possible case. In the 54th, the men have suffered from the effects of a warm climate, and the quantity of blood which they lose, without fainting, is, in comparison, much smaller than what the more unimpaired vigour of the latter admitted, but the quantity being thus proportioned to the strength, by the test which is adopted, the effect on the disease is no less complete. When the violence of the disease has remitted, the aqua lythargyri acetati is a remedy which, from my additional experience, I cannot too highly recommend. The rapidity and the certainty with which it diminishes the swelling and the purulency, when employed in this state of the disease, has not met with a single exception in the great number of cases in which I have recently seen it employed. Besides these permanent effects, by agitating the matter at the same time that it itself decomposed, it cleans the eye

more effectually than can be done by the most careful washing.

Calomel, suspended in water, in different proportions, seems to give considerable relief during the more violent state of the disease, and continued with ointment, has considerable efficacy in removing the protrusions.

The circumstances, which attended the aggravation of the disease in the 54th, were so much remarked at the time, and are so consonant with the inferences I have ventured to draw, with respect to the relation, which the disease seems to have with certain physical causes, that it is but justice to the argument to state the following facts, according to the exact relation of Mr. Redmond, the surgeon. The Ophthalmia had affected upwards of thirty men, without offering any thing very alarming in its appearance. The patients were lodged under canvas, to cut off, as much as possible, their communication with the barracks. The night of the 24th of Sep-



tember proved so wet, that the channels dug round the tent were overflowed, and the canvas was so wet, as to oblige the men to crowd into the centre, where, with difficulty, they kept themselves dry. In the succeeding morning, every case had assumed the appearance I have described, as attending the utmost violence of the disease, presenting such a scene of confusion and distress, as can hardly be imagined.

This is the only opportunity which is left me of farther refuting the opinion of the disease being propagated by other means than by the contact of the discharge which takes place from the eyes of the diseased, with those of the healthy.

The support which it has received from the inquiry prefixed to Mr. Edmonstone's treatise on the varieties of Ophthalmia, justly entitle it to consideration. This author, who stated the same opinion less fully in the treatise I have already noticed, admits the infectious nature of

the discharge from the eyes, at the same time by a number of observations on the abstract nature of contagion, he endeavours to explain its propagation upon the principle of some more subtile effluvia arising either from the system, or the eye of the patient. The first of these is already considered in the text, the latter has been adverted to only in the note. Since that time I have seen much of the disease, but have met with no affirmative proof of this supposition, while the grounds on which it may be denied, daily acquire strength from their number. No military or medical officer has yet contracted the disease, without being sensible of some local communication, and the uniform escape of those of both capacities, who daily inspect the sick, is a sufficient answer to the first. I have continued, with impunity, to examine the eyes, when under any particular state of the disease, with a glass, whose focus requires that the eye of the observer must be within less than an inch of the ob-

ject. The opinion that the disease is communicated in the manner I have endeavoured to maintain, now prevails so generally among the military and medical officers of those regiments in which it has occurred in England, that all fear of receiving the disease in any other way, is completely laid aside.—In the treatise, to which I have now referred, will be found the most comprehensive view of the different physical peculiarities of Egypt, as they seem to be connected with this complaint. By its occurrence in Great Britain, with equal severity as in Egypt, this inquiry is necessarily abridged to the nature of such causes as are common to both climates, but no less merit remains due to the judgment with which, in this instance, their comparative influence has been appreciated.



*ON THE PREVENTION.*

FROM the nature of the means, by which medicine is at all enabled to controul it, no less than from the alarming nature of the complaint, the means of checking its further extension deserve the most serious consideration. The progress which it has made in the army, since its first introduction, making every allowance for the circumstances, which there necessarily favour its propagation, renders its appearance, in civil society, an event more than probable. That any means, indeed, can be resorted to, which will prove capable of preventing its immediate introduction among the lower classes in life, I am afraid there is little reason to hope ; and to suppose that a disease so contagious in its nature, so

tedious in its continuance, and so liable to a relapse, can be long confined to any particular class, is a conjecture no less improbable. If experience is required to give force to our reasoning, we have only to look at the inhabitants of that country. from which it has been imported, where we shall find that they have long had the present disease, added to the load of their other miseries. The only means which can be opposed to this disastrous occurrence, is a knowledge of its nature, and the means which necessarily suggest themselves of avoiding it, which will be more likely to be adopted, from knowing the extent of the danger.

I leave, however, this extensive and interesting subject, to consider the means most likely to prevent its further extension in the army, where, from the necessary intercourse, which must exist among its different departments, it is rendered a point of still greater intricacy. As we are as yet ignorant of the precise cause by which the infection of the

disease is regulated, we ought to be guided in our practice by the most extensive precautions. With that view, it may not be amiss to recapitulate the more essential points in the nature of the disease ; I have observed, in many cases, it advanced to such a state as to form purulent matter, before the patient was himself aware that he was affected. A daily and minute inspection by the medical officers, becomes a duty of the first moment, both on account of the individuals, who may be thus affected, and their comrades, by the immediate removal of the former. To prevent, however, the consequences which may accrue before the discovery of the disease ; other means should not be neglected, every precaution should be instilled into the men, to induce them, of their own accord, to be attentive in avoiding the disease. The use of barrack towels should be laid aside on the first appearance of the disease, as they afford a constant medium for its communication, at the same time



if the men are not provided with separate towels, they will, in all probability, have recourse to some other article, which they will use equally in common, while it will be less frequently renewed. Separating the men, as much as possible, is a good precaution, (though not often practicable,) since by placing them in cantonments we must effect any good, at the expense of the inhabitants.

To prevent the contagious matter from taking effect, should it have got access to the eyes, in defiance of these precautions, it will be found a very salutary practice, frequently to parade the men in their respective companies, with separate vessels of water, while an officer attends to see their faces and eyes carefully washed. As exposure to the sun, exercise, or similar causes, cannot produce the disease, unless its specific contagion has been previously applied, no danger need be apprehended from making the healthy part of the regiment undergo their usual fatigue, which may even have the good

effect of making any cases, which are latent, more liable to detection, by the aggravation it may occasion. Such rules will be found particularly necessary among recruits, as men who have witnessed the effects of the disease, will be of themselves attentive to avoid its contagion. Another source of the disease is to be found in the disposition it has to remain in a degree so slight, as to deceive both the patient and the surgeon; it becomes, therefore, a matter of much importance, to decide the time when it is fit for a man, who has been affected with the disease, to return to his duty, not so much from the risk he runs of a relapse, as the chance he affords of giving it to others. If it were possible to keep the convalescents by themselves, without interrupting their duty, for a considerable length of time after the disappearance of every symptom, it would not only lessen the chance of giving the disease to others, but by accommodating the duty to the particular stage of convales-

cence, would occasion less risk of a relapse. By allowing convalescents immediately to return to their companies, they must either retard the discipline of the whole, or expose themselves to an imminent danger of a relapse. On the other hand, there is a possibility of falling into an opposite extreme, if a number of convalescents are kept together, without attention to the different stages of the disease, as the men, by considering themselves as still subjects of the disease, are less careful in avoiding a new infection, which from the greater accumulation of the contagion, is more likely to take place. The difficulties, which thus press upon every side, it is almost impossible wholly to surmount ; it is, however, a satisfactory consolation to know, that every measure which prudence can suggest, will be vigorously executed under the inspection of the present medical board ; while, at the same time, there is reason to indulge the hope that the violent form of the disease will be confined to particular situa-



tions, and as whatever contributes to lessen its severity by diminishing the source of its propagation, that this calamity, by vigilance and attention, may be averted from this important part of the community. At all events, we have the consolation of now possessing a remedy almost certain in preventing the disease from producing those effects which convert its unhappy sufferers from being useful servants of the public, to a burden both to themselves and to their country.



## APPENDIX.

(No. I.)

Statement of the time of attack, and duration of the pain, taken on the 22d of June, 1806, from the different patients then in the hospital.

*Thomas Low*—pain commences about two p. m. and continues until four a. m. every other night.

— — *Lynch*—pain has been almost constant for three weeks, observes no particular time of remission\*.

\* Since the above report, he has had a second attack of the pain, in which it occurred at intervals; at the commencement of one of the paroxysms, the superior palpebra swelled almost in an instant, to a very great extent: he was bled without any abatement of the pain, which ceased three hours after, having taken two grains of opium, with a half drachm of spirit of wine a little before; the spirit of wine was given in mistake for aq. ammon.



—— *Boyle*—has had pain for seven days, which commences at eight p. m. and continues to four a. m.

—— *M'Kern*—has been three months in hospital—during the first month had paroxysms of pain from nine p. m. until seven a. m.; during the second month, he was quite free from them; during the last, they recurred at the usual time.

—— *M'Donald*—in hospital five weeks, was subject to the recurrence of pain for a fortnight, which continued from half past eight p. m. to ten a. m. \*

—— *Whitelock*—in hospital a month, had pain for three weeks, with short intervals of ease about mid-day †.

—— *Saunders*—in hospital five weeks, extreme pain for a fortnight,

\* Has been a second time affected with pain, occurring in regular paroxysms.

† The pain mentioned above was suspended for two days; on its next occurrence, Mr. Peach consented to my giving him an emetic, the operation of which somewhat lessened the present paroxysm; after its remission he took bark in frequent doses; the next

commencing at nine p.m. and continuing to seven a.m.; of late has it occurred at ten a.m. and continue to seven.

—— *Stuart*—three months in hospital; for four weeks, pain from four p.m. to seven.

—— *M<sup>r</sup> Kenry*—eyes affected for three months, paroxysms from three a.m. till nine.

—— *Baine*—pain continued a week from ten to twelve p.m.\*

—— *Malcock*—six weeks ill, pain without intermission for the first fortnight.

paroxysm occurred an hour later, after which he had no more, although at the usual time he felt a few twitchings, as he called them, which never amounted to any thing like a paroxysm of pain—N. B. This man was above the middle age, and much debilitated, and the pain was chiefly situated in the head.

\* This young man, who lost the sight of both eyes, was of a full habit, a sanguineous temperament, and was a strongly marked example of the continued form of the disease

—— *Whiting*—eyes affected for six weeks, has been subject to two attacks of pain of a fortnight each ; the first had a little intermission, the second occurred at regular times.

—— *M<sup>c</sup>Nelly*—nine weeks in hospital, had pain, with little intermission, for a fortnight.

—— *Kean*—eight weeks ill, pain continued a month, with irregular remissions.

—— *Vicar*—nine weeks ill, a fortnight of which he had attacks of pain, which lasted from nine p. m. to five a. m.

—— *Deanlove*—in hospital five weeks ; slight pain during the first fortnight, was sensible of no particular time of remission.

—— *Sloane*—in hospital a month ; pain for sixteen days, with a regular abatement from nine to ten a. m.



—— *Hughes*—ten weeks in hospital; nine of which he was subject to pain, with an interval of ease from three to five p. m.

—— *Euington*—in hospital ten weeks; pain occurred from nine p. m. to seven a. m.

—— *Fenol*—in hospital six weeks; alternate pain in right and left eye; never felt pain in both at the same time; did not remark any regular time of its thriving.

—— *Dean*—five weeks in hospital; pain continued to return for twenty-one days, with regular remissions about five a. m.

—— *Orton*—eyes affected for a fortnight; no pain till night, when it commenced at eleven p. m. and went off at two a. m.

—— *Hammel*—pain during a fortnight from one a. m. to six.

—— *O'Neil*—six weeks in hospital; pain for three weeks, from four a. m. to six.

—— *Judge*—four weeks ill; a fortnight subject to pain, which lasted from four a. m. to nine.

—— *Campbell*—four weeks ill; eight days in pain, which commenced about mid-day, and went off at five p. m. \*

—— *Rossu*—a month in hospital; has had pain for a fortnight; it came on at four p. m. continued to nine, and from five a. m. to nine a. m.

\* This was one of the most distressing cases which occurred; the attack alluded to in the text, was the second recurrence of the disease, and produced the rupture of both eyes; since that he has been at different times, after being supposed quite well, attacked with the most excruciating pain, both in the head and eyes; in the latter, after the rupture of the cornea, he described it, as an insufferable burning sensation, not so much in the eye itself, as all around the socket; his pulse was extremely small and quick, repeated bleedings to forty ounces, and the strongest narcotics had no effect in diminishing the pain. Upon a more recent attack, which was extremely sudden and violent, he was blooded to  $\frac{3}{4}$ xxv. which did not entirely remove the pain at the time, but he had no violent return, and was soon again dismissed.

—— *Moss*—eyes affected six weeks ; pain recurred for seven days, from ten a. m. to three p. m.

—— *Austin*—ill five weeks ; pain continued to recur for three weeks, from nine p. m. to twelve, and from three a. m. to seven.

—— *English*—six weeks in the hospital, three of which he had almost constant pain.

—— *M'Dermot*—ill four weeks ; had pain three weeks, from five p. m. to three a. m.

—— *Townshend*—eighteen days in hospital ; pain for a fortnight ; paroxysms recurred every other night from five p. m. to seven a. m.

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The reports of these cases are taken according to the order of the patients in the hospital, which contained at the time, the number of seventy-one. The remaining cases, corresponding with those which have been mentioned, I have



thought it unnecessary to insert. It is to be noticed, that the date of admission into the hospital is not the same with the commencement of the disease, the hospital being reserved for those cases which had advanced to the second stage. At the time this report was made, blood-letting had not been employed to a great extent in the first stage, which never failed to render the paroxysms shorter in their individual duration, and if properly persisted in, seldom failed to check their recurrence.

## APPENDIX.

(No. II.)

The following is the Recipe for a wash, used in several hospitals for phagedænic sores, and which is known by the name of the Aqua Sapharina.

R. Acet. Cupr. gr. v.  
 Muriat. Ammon. ʒij.  
 in Pulv. redact. in aq. Calc. ʒviii.  
 Solve et per chartam cola.

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## LOTIO OPHTHALMICA.

R. Aq. Litharg. Acet. ʒiii.  
 Acet. - - - - - ʒi.  
 Aq. Font. - - - - - ʒviii. M.

## CREMOR SATURN.

R. Crem. recentis cochleare minim.  
 Tinct. Opii.  
 Aq. Litharg. aa gr. viii. M.

A little to be dropped into the eye with a camel hair pencil.



# APPENDIX.

(No. III.)

## DIET-TABLE OF REGIMENTAL HOSPITALS.

Meals.	Full	Half	Low	Spoon or Fever Diet	REMARKS.
Breakfast	1 Pint of Milk Porridge or Rice Gruel	1 Pint of Milk-Porridge or Rice-Gruel	1 Pint of Milk-Porridge or Rice-Gruel	Tea	All Extra Diet to be given at the Discretion of the Surgeon.
Dinner	$\frac{3}{4}$ Pound of Meat 1 Pound of Bread	$\frac{1}{2}$ Pound of Meat $\frac{1}{2}$ Pound of Potatoes 1 Pound of Bread	$\frac{1}{4}$ Pound of Meat, or made into weak Broth $\frac{1}{2}$ Pound of Bread $\frac{1}{2}$ Pound of Potatoes	$\frac{1}{4}$ Pound of Bread made into Panado or Pudding with as much Milk or Sago	
	1 Pint of Broth made from the Meat		1 Pint of Milk Porridge or Rice Gruel	Tea	
Supper					

N. B. The Milk Porridge is supposed to consist of Three Parts Gruel, with One Part Milk.